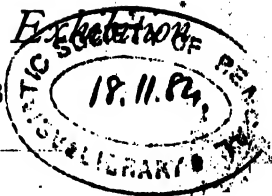


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THE

FISHERIES EXHIBITION LITERATURE.



VOLUME IX.

PRIZE ESSAYS—PART II.

IMPROVED FISHERY HARBOUR ACCOMMODATION FOR GREAT
BRITAIN AND IRELAND.

THE BEST SYSTEM OF LIFE INSURANCE FOR FISHERMEN, AND
OF INSURING BOATS, GEAR, NETS, Etc.

THE RELATIONS OF THE STATE WITH FISHERMEN AND FISHERIES.

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THE HISTORY OF DUTCH SEA FISHERIES: THEIR PROGRESS,
DECLINE AND REVIVAL.

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PRIZE ESSAYS—PART II.

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IMPROVED
FISHERY HARBOUR ACCOMMODATION
FOR
GREAT BRITAIN AND IRELAND,
INDICATING
THE LOCALITIES MOST IN NEED OF SUCH HARBOURS, THE
GENERAL PRINCIPLES ON WHICH THEY SHOULD BE CON-
STRUCTED, AND THE POLICY THE STATE SHOULD ADOPT
IN AIDING AND ENCOURAGING HARBOUR ACCOMMODATION
FOR FISHING PURPOSES.

"STATIO MALEFIDA CARINIS."—[J. C. WILCOCKS.]

IMPROVED
FISHERY HARBOUR ACCOMMODATION
FOR
GREAT BRITAIN AND IRELAND.

THE natural harbours of Great Britain and Ireland being so very unequally distributed along the coast-line, art has stepped in here and there in some instances to supply that which nature has denied, and considerable benefits have thereby accrued to the fisheries ; but a great deal yet remains to be done, as, for want of adequate provision for the shelter of fishing boats, very many lives are lost, and thousands of pounds remain unearned which otherwise might be added for the well-being of the fishing population, whilst at the same time the food supply would be much increased for the nation at large.

A number of our fishing harbours are dry, or nearly so, at low water, and in consequence of this our fishermen will not go to sea in unsettled weather, for they know too well that after and before certain times of tide the entrance door of the harbour is shut against them, and consequently they must, if they go out, keep the sea at all risks until by the flowing of the tide there is sufficient water for them to enter.

These shallow harbours are also very dangerous to enter in a gale, for the sea breaks often so heavily in and about the entrance that the greatest possible risk is run when close

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to the shore, and there have been numerous instances of the loss of boats so near the land that the countenances of the crew have been plainly recognised by their anxious friends on land before the last fatal wave has struck the boat.

In the opening chapter of his work, 'The Design and Construction of Harbours' (Adam & C. Black, Edinburgh), Mr. T. Stevenson, C.E., F.R.S.E., observes as follows : "Many parts of the British coasts are amply provided with natural bays and creeks, while in other districts the accommodation and shelter for shipping have been entirely supplied by artificial means."

Thus great portions of the coast-line of Scotland and Ireland have good harbours, the south and west coasts of Ireland and Scotland in particular, but the good harbours of England, if we except Devon and Cornwall, are far apart, and there is a great dearth of deep-water ports on the east coasts of England and Scotland.

Although every small additional fishing harbour is an undoubted gain to the industry of the district, the great desideratum for the fishing population is the creation at the most frequented districts of the fisheries, at certain centres, of roomy harbours with deep-water entrances, which the boats may take with confidence in bad weather, so that the crews may not feel, as is too often the case, that the nearer they are to safety in approaching the harbour's mouth, the greater is the danger, owing to the shoalness of the water.

THE EAST COAST OF ENGLAND.

That part of the coast from the Isle of Sheppey to Great Yarmouth is on the whole well supplied with harbours, as we have the East and West Swale, the Medway, the Thames mouth, the rivers Crouch, Blackwater, and Colne, Harwich

Harbour, Woodbridge and Orford Havens, Lowestoft and Yarmouth.

If the latter could have a deep-water entrance provided for it, equal in depth to that of Lowestoft, a most valuable desideratum would be obtained.

Blakeney and Wells might also be much improved with advantage to the fisheries. On account of the large quantity of mussels which can be here raised, and which could be vastly increased in supply if adequate protection by law were given to this piece of coast and the shoal ground of the Wash, all this district may be of future great importance to the line fisheries as regards the provision of bait.

The Humber will probably always remain a great fishing station, but the shoals named the Binks are certainly embarrassments which can never be removed, and have caused many losses.

From the Humber to the entrance of the Forth we have a distance of at least 200 miles, and there is no really extensive deep-water harbour the whole distance free of embarrassing dangers about the entrance.

The Tyne is, from the improvements of late years, the best in this interval, but from the Humber to the Tyne we have a distance of 123 miles, and there are dangers on each side of the entrance. Bridlington, Whitby, Scarborough and the Tees, being tide-havens, are shallow and mostly dry on the recess of the tide, and therefore constantly inaccessible when their shelter is most required. Filey Bay, about 42 miles from the entrance of the Humber, is, the writer believes, decided on as the most fit position for a refuge harbour on this part of the coast. It is certain to become a great fishery port on account of its excellent position with regard to the North Sea fisheries generally, and the locality has specially favourable conditions, the depth being moderate,

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with gradual soundings to the shore. A reef or ledge of rocks known as Filey Brigg, or Bridge, forms the north horn of the bay, extending from the coast and sheltering the anchorage, which is often used by coasting vessels as a stopping place during an adverse wind and tide.

It does not appear that any indentation of the coast exists more northward sufficiently deep to warrant the construction of a work of this kind ; it is therefore pretty certain that whatever is done will be done here, as sundry inspections have been made and reports sent in by Government order. It is one of those situations which is certain to combine both a refuge harbour for shipping and a fishing port in one, and seeing that this is the case, it should be constructed at the national expense without the condition of local assistance for the breakwaters ; but as to special accommodation for fishing boats over and above such breakwaters, assistance from Government by loan in aid of local efforts should be afforded at a low rate of interest, which could be raised by moderate dues on boats discharging fish.

The largest class of boats might pay £3 per annum if belonging to the port, but strangers merely taking shelter should be free.

A company was proposed some years since to build a harbour here as a commercial undertaking, but the writer is not aware that any work has been commenced.

It is very certain Filey and its vicinity would have its present conditions changed, for the land in the vicinity would much increase in value, from a demand for building sites, and to the great advantage of the landholders, who might very well contribute to the fishing accommodation which a refuge harbour *per se*, over and above shelter, does not provide.

It is absolutely certain that a very large portion of

the North Sea trade, in addition to fishing boats, will run for this harbour, should it be built, and, as during their sojourn many requirements must be satisfied, a variety of trades will spring up.

The absence from outlying dangers, which would distinguish a harbour at Filey from many others, would cause it to be preferred to all others on this coast.

The Brigg would probably be incorporated as a feature of the work.

During the herring season a harbour at Filey would certainly be frequented by a considerable fleet of Scotch boats, which annually go as far south as Yarmouth for this fishing.

That a harbour will eventually be made here may be considered certain, and inasmuch as a very large number of boats and vessels will frequent it, it is to be hoped a sufficiently comprehensive design will be planned, so that we may not fall into the same errors as at Alderney and Holyhead, and, by constructing works on too limited a scale, find that to alter the plan will admit re-entrant angles on the exterior of the piers and breakwaters, so well known to be a fatal error.

In his prize essay on Harbour Accommodation for 'Fishing Boats, East and North Coasts of Scotland,' 1882, Edin., Mr. Archibald Young, Advocate, Inspector of Salmon Fisheries for Scotland, page 74, draws particular attention to North Sunderland, 40 miles north of the Tyne, and 23 south of Berwick-upon-Tweed, near which there is, he states, a very important herring fishery carried on in the neighbourhood of the Farne Islands by Scotch boats which land their fish at Eyemouth and Berwick.

"In 1877" (he states) "there were 200 boats, from Eyemouth and other stations on the Berwickshire coasts,

fishing off North Sunderland. The fishing ground is capital, and subject to less than the usual fluctuations which characterise the herring fishery, but it is not half developed, owing to the want of adequate harbour accommodation, there being no sufficient shelter between North Sunderland and Berwick-on-Tweed, 23 miles to the North, and between it and the mouth of the Tyne to the south, a distance of 40 miles. North Sunderland is the chief seat of the kippered herring trade, but in 1877 the harbour could accommodate only seventy-six boats. In that year the fishery officer gave the following evidence with regard to the harbour :—‘ The present catch of herrings is from 15,000 to 18,000 crans, worth from £20,000 to £25,000, but by an expenditure of £10,000 on the harbour, accommodation would be provided for from 300 to 400 boats, whose catch would be from 60,000 to 80,000 crans, worth from £80,000 to £100,000.’ ”

“ A harbour of sufficient space would admit of the white fishery being prosecuted, as at Eyemouth, in large-decked boats, namely, for cod and haddock. The estimated value of the haddock fishery at Eyemouth is £30,000 annually. Their best fishing ground is south-east of Berwick-on-Tweed, and more easily reached from North Sunderland than from Eyemouth. The Trustees of the Crew Estate, with the consent of the Charity Commissioners, were prepared to undertake the improvement of North Sunderland Harbour on receiving an opinion favourable to the undertaking from Messrs. Buckland, Walpole, and Young, which is given in the second supplementary report to their principal Report in 1878.”

As the writer takes it for granted the jurors will have charts at hand, he would desire to observe, that the Farne Islands lie to the N.N.-eastward at varying distances

of from two to four miles from North Sunderland, and that therefore they afford the means of breaking the sea very considerably from that direction, round to north by west westerly, when Holy Island and the coast take up the shelter. There is great encouragement, therefore, to extend harbour accommodation here. The chart shows the depth to be from one to four fathoms close to the harbour of North Sunderland at low-water spring-tides. The writer strongly recommends the extension of harbour accommodation here to not less than the area required for 400 boats, in conformity with the views of the fishery officer, and Messrs. Buckland, Walpole, and Young, and after a careful scrutiny of the Admiralty Chart of this division of the coast.

EYEMOUTH.

This place, which not long since lost the flower of its fishing population in one gale, requires its harbour to be much extended. In 1877, says Mr. Young, Mr. P. Wilson, fishery officer at Eyemouth, gave the following evidence with regard to the harbour: "The harbour at Eyemouth is inconveniently small, especially for the large-decked boats. The boats are all aground at low water. They can enter the harbour at about half-tide. It would be important to improve the harbour accommodation."

The writer would recommend additional area to be enclosed in deeper water, and if it could be done without risk to the foundations of the quays, that the harbour at present existing be deepened, so that the larger boats may be able in the chief part of it to remain afloat.

Regarding provision of funds for the performance

of the work, the writer would propose that half the sum required for both North Sunderland and Eyemouth Harbours be found by the nation, and that the other half be loaned at 6 per cent., 3 per cent. to be considered interest for the loan, and the other 3 devoted to the extinguishment of the debt. This would render the matter easy by spreading it over a series of years. The writer wishes to be understood to say, that half the required sum should be provided as a free gift from the nation, and that the interest is to be charged only on the remaining half.

DUNBAR.

The repairs to this harbour have been efficiently completed, but on account of the increased size of the larger class of boats, more depth of water is still desirable. The writer would recommend the same course to be adopted as advised in the two previous harbours mentioned in regard to provision of funds. Where these additional expensive works are carried out, it may be necessary to charge the largest class of boats as much as £3 annual dues for those belonging to the harbour, the other boats so much per ton, new measurement, which are occasional visitors.

ANSTRUTHER.

This harbour has from time to time suffered most severely from gales, and very heavy sums of money have been expended in repairs.

To aid in the repairs required after the gales of 1869-70, a special grant of £7000 was made by Parliament. Much

money has been obtained by local energy in repairs and improvements here as well as at Dunbar.

Mr. Young tells us, p. 76, 'Fish and Fisheries' (William Blackwood & Sons, 1882), that from £40,000 to £60,000 have been spent on this harbour, which has an area of seven acres, and spacious and handsome quays, but it is deficient in depth. Outer works may be necessary before deepening the entrance, lest higher waves be admitted, to the detriment of the tranquillity of the interior. Regarding provision of funds, the writer recommends the same course as before.

ROOME BAY, CRAIL.

This bay or cove near Crail is highly spoken of, and might apparently be made into a good harbour. It is $3\frac{3}{4}$ miles from Anstruther towards Fife-Ness, and has been very favourably reported on by Mr. James Leslie, of 72A, George Street, Edinburgh, as stated by Mr. Young. Mr. Leslie states: "It is at a part of the Firth where the shelter of a harbour is very much wanted, to save vessels from having to run up in easterly gales to the lee of Inchkeith, or to Burnt Island roads, or even above Queensferry, and where it would be of great use in westerly gales, which, although they do not raise so heavy a swell in the Firth of Forth as those off the German Ocean do, are nevertheless more frequent, and often more violent, so that it is no uncommon thing for vessels to be blown out of the Firth by a heavy south-wester, for want of some secure place of refuge which they might run to."

Mr. Leslie then describes two plans of different extent and expense, and reference would doubtless be made to the same before commencing any work here. Recommendation can scarcely be more strongly expressed of the desirability of a

harbour here, and the writer would wish to record his concurrence with the views of Mr. Leslie.

PETERHEAD.

This port is almost the chief fishery port in Scotland, Fraserburgh alone being superior to it. It enters not only into the herring and home, but also into the Arctic whale and seal fisheries. It has two harbours connected by a canal, and being seated as well on a peninsula, the entrance of either harbour can be used for arrival or departure, as the wind may render most convenient.

Mr. Young tells us the north harbour has an area of $9\frac{1}{4}$, the south of $5\frac{1}{2}$ acres, there is also a third and new harbour at Port Henry, of about 5 acres.

Great improvements have been made, but at times there is so great an influx of boats that the harbour area is insufficient. Herrings cured at Peterhead in 1880, 271,850 barrels; 647 boats employed; tonnage, 6874 tons; crews, 2656 men; curers, coopers, and fishermen; total employed afloat or ashore, 6723, in 1880. Boats, 311, first class over 30 feet keel; aggregate tonnage, 5287. The first-class boats far preponderate over the others, and by their size have quite outgrown the harbours; "deeper and more spacious harbours, therefore," says Mr. Young, "are a matter of national importance, and indeed of absolute necessity, if full advantage is to be taken of the unexhausted and inexhaustible harvest of the sea."

Peterhead, however, is so situated that much additional harbour accommodation is requisite, being one of those which from their situation should combine in one locality both harbours of refuge and fishing boat accommodation.

Its immense superiority, says Mr. Young, over every other seaport on the east coast of Scotland has been again and again pointed out and demonstrated by Government Commissioners, by officers of the Navy and Mercantile Marine, by civil engineers, and by other persons of skill and experience.

"The Commission of 1858-9 pointed out that as harbours of refuge were not likely to be taken up as a commercial speculation, Government should come forward and offer inducements to harbour trustees and commissioners to combine harbours of refuge with mercantile harbours. The suggestion was carried out in the Act of 1861, known as the "Harbour and Passing Tolls Act," which inaugurated the lending of money at moderate rates of interest, for the improvement of existing harbours, and through its operation much good has been effected. Peterhead was one of the places specially recommended by the Commission of 1858 for a harbour of refuge."

The following extracts from a paper read before the Herring Fishery Commissioners in 1877, by Mr. Boyd, agent for the Harbour Trustees of Peterhead, are given us by Mr. Young at page 79, 'Fish and Fisheries':—"The north-eastern portion of the coast of Scotland, from the Firth of Forth on the south, to the Firth of Cromarty on the north, comprehending a sea-board of 160 miles, is throughout the greater portion of its extent precipitous and rocky, and of a bold and dangerous character."

"It is exposed to frequent easterly gales of great violence, but, although much frequented by shipping, and although it comprehends within its limits the most important stations for the prosecution of the fisheries in Scotland, it affords no place of safety to which vessels and boats can at all times run for refuge when overtaken by storms. For nearly 200

years the most competent nautical authorities have regarded the position of Peterhead, which is situated nearly midway between these Firths, and on the most easterly promontory of the mainland of Scotland, as possessing peculiar and exceptional natural advantages as a site for a harbour calculated to afford shelter and refuge on this dangerous coast, and these advantages, have, on various occasions, received national recognition."

"That portion of the fishing ground which lies about thirty miles in a south-easterly direction from Peterhead is admittedly the best and most productive on the east coast of Scotland, and the fishery is prosecuted in its vicinity, not only by boats sailing from Peterhead, but by those engaged at all the other ports and creeks on the sea-coast of Aberdeenshire, extending for a distance of fifty miles, and including the important fishing stations of Aberdeen and Fraserburgh. The number of boats fishing at the Aberdeenshire stations, of which Peterhead is the centre, amounted in 1876 to 2098 ; they were manned by 12,600 men and boys, the value of property involved in their safety amounted to £630,000, and they afforded employment to 10,500 persons on shore. Notwithstanding the inadequacy of the accommodation at present available at the harbours of Peterhead, they frequently supply means of shelter in stormy weather to portions of this great fleet—an important advantage, which would be greatly increased if their capabilities for refuge purposes were to be extended." "The Select Committee appointed by Parliament in 1857 to inquire into the policy of making further grants of public money for the improvement and extension of harbours of refuge, collected and placed on record convincing evidence in favour of Peterhead as the best site on the east coast of Scotland ; and the Royal Commissioners appointed to complete the inquiry

reported on its eligibility in the following terms :—"Its advanced position at the most prominent headland on the east coast of Scotland constitutes it a turning-point to the greater part of the traffic frequenting the Moray and Pentland Firths ; it is much resorted to by wind-bound vessels, and is a favourite port of call for orders as well as an excellent land fall, and point of departure for the passing trade ; it is the principal port of the Scotch whalers, and is a considerable station for the herring fishery ; it presents the most fitting point for the collection of convoys, and for a naval station for the protection of the trade on that part of the coast of Scotland."

"It was stated to us that a breakwater to convert the south bay of Peterhead into a moderate-sized harbour of refuge could be constructed for about £300,000, owing to the configuration of the bay, and the abundance of granite lying close at hand. . . . Under these favourable circumstances, combined with the consideration of the natural facilities which we have detailed, we recommend the enclosure of the south bay at a cost not exceeding £300,000 ; and considering the proportion which the shipping trading to the port will bear to those of the passing trade, which will resort to it for refuge purposes, we are of opinion that the amounts of national and local benefit conferred will be fairly represented in the proportion of one-third and two-thirds respectively. We therefore submit that a grant of £100,000 be made in aid of the proposed harbour, to be met by a sum of £200,000 raised in the locality, and to be applied to the same purpose." The Harbour Trustees finding it impossible to raise this large sum, the matter remained in abeyance, but the *Scotsman* newspaper of November 1, 1882, had the following paragraph on the subject :—"With reference to construction of harbours of refuge on the east coast, we

understand that in so far as Scotland is concerned, it has been resolved by the Government to construct an extensive breakwater at Peterhead, which will make a safe harbour easy of access at all times. It is also understood that the works, which will require a considerable number of years for their completion, will be largely executed by Scotch convict labour." Convict labour has been found very satisfactory at Portland, and, where unskilled labour can be made to perform a large part of the work, is decidedly advantageous.

FRASERBURGH.

This is now the chief herring station in Scotland. It has an excellent harbour, due, Mr. Young tells us, to the enlightened liberality of Lord Saltoun, and the well-directed exertions of the Harbour Commissioners. It is large, deep, and safe.

BUCKIE.

A floating harbour has been here constructed, owing to the munificence of the late Mr. Gordon of Cluny. It is constructed of concrete, and has an area of 8 acres. The cost was over £50,000. It has an outer and inner basin, and accommodation for 450 first-class boats. It is the only good harbour on the south shore of the Moray Firth. The rest are small, shallow, and require deepening and enlargement.

The Fishery Board in their report for 1880 state they will undertake improvements at Roschearty in Aberdeenshire, having entered into arrangements with the Local Harbour Board. In their report for 1881 they say, at Roseheart the works were begun in July, and were approaching completion. On the north shore of the Firth there is not a single good harbour, although such could be made.

HELMSDALE.

This place has a defective harbour, with abundant fishing grounds in the vicinity ; so defective is the harbour that the boats cannot enter much before half-flood. Being a bar-harbour the entrance is very dangerous, and is, like most others of the type, most hazardous to deal with during floods, when at the same time there may be a heavy sea on the bar. At present there is room for 170 or 180 boats.

From the evidence of two fishermen before the Herring Fisheries Commission, of which Mr. Young was a member, it appears that improvement is badly wanted.

By a new entrance to the east of the present, Hugh McAngus, fisherman, stated the bar might be altogether avoided. This is a most important feature. Angus Macaulay spoke also to the same effect. They would be willing to pay increased dues for effectual improvements, 25s. to 30s. per boat, which would yield about £500 per annum. Aid should certainly be given, half by gift and half by loan, at 6 per cent., on the extinguishing principle, of the sum borrowed, as previously recommended.

FORSE COVE .

Is about eighteen miles from Helmsdale, and two from Lybster. From a careful study of the chart, and Mr. Young's notice of this cove, the writer strongly recommends its conversion into a harbour. The chief features are its large area and the fact of 20 ft. of depth existing within it. It is large enough, Mr. Young states, "to shelter 700 to 800 boats ;" would be one of the best, if not the best, on the Caithness

coast, and would also form a refuge harbour for passing shipping on a small scale. Assistance recommended as for Helmsdale.

LYBSTER.

This harbour, two miles to the N.E. of Forse Cove, is much dilapidated. In 1877, when visited by Mr. Young, the harbour was much decayed, the pier having been breached through by the storms. Very strong evidence of the necessity of repairing the works was given before the Herring Fishery Commissioners in 1877.

Mr. Thomson, fishery officer, stated, amongst other matters, that the harbour is not at all adequate for the boats. Five to six thousand pounds would be requisite to make of it a very good harbour.

Recommendation as in the case of the last named.

WICK.

Of this very important station, Mr. Young speaks very sadly: "More than half the breakwater has been washed down, and the bay filled up with the débris." This was quoting the late Captain Macdonald, H.M.S. *Vigilant*, Fishery cruiser, who gave his evidence in 1877. In a note to his essay, p. 86, Mr. Young states:—"Since the above was written, the aspect of affairs at Wick has brightened." "A new plan of extension and improvement has been prepared by Mr. J. Barron, C.E., and accepted by the Harbour Trustees. Salient features: extension of the South Pier as a breakwater and a quay, and concrete breakwater on the north shore, leaving an entrance of 250 ft. wide; various erections and internal improvements, including dredging and deepening the bed of the river. In the breakwater no concrete block less than

200 tons to be used, and greater number to be of 800 to 1200 tons each. Estimated cost of works, £110,000. The first block was 40 ft. thick, the width of the quay, and the side facing the harbour entrance 32 ft. in length; estimated weight, 1300 tons." Mr. Stevenson states that no work at right angles to the point of maximum exposure has been able to withstand the fury of the sea at Wick, and that in 1873 a mass of concrete was carried away from its position containing 1500 cubic yards of cement-rubble; estimated weight about 2600 tons. Mr. Bremner, C.E., recommended that breakwaters in very exposed positions should be very obliquely placed, and should be laid out so as to form a horizontal angle of not more than twenty-five degrees with the heaviest billows. He had much experience at harbour works at Wick.

THE NORTH COAST OF SCOTLAND.

Between Scrabster Roads, near Thurso, and Loch Eriboll, nearly 50 miles of coast, there is no good fishing-boat harbour.

Much herring fishing was formerly done at Port Skerra, 18 miles west of Thurso, and a mile north-west of Melvich Bay. Port Skerra is very small, but deep, and dangerously narrow from rocks on each side. Melvich Bay is roomy, with sufficient water, and Mr. Young states a much better harbour might be constructed on the west side of Melvich Bay than exists at Port Skerra.

There can be no question that an increased number of boats would be owned here if this additional harbour were constructed, which the writer concurs with Mr. Young in recommending. Regarding funds the writer recommends the half donation method from Government, and half loan extinguishment 6 per cent. method therewith, as previously mentioned.

PORT SCULLAMIE.

Here, Mr. Young tells us, a fishing boat harbour has proved a failure, and recommends the removal of the materials to a more promising site between Tongue House and Scullamie, where a natural reef of rocks affords great facilities for the construction of a safe fishing-boat harbour for a moderate number of boats. A smaller reef a short distance from it, a sandy bay between the two ; a small breakwater and two short piers, he considers sufficient. Mr. Young also draws attention to Tolmine, on the opposite side of the Kyle of Tongue, where by joining a small island with the mainland, with a pier of 100 yards length, a safe harbour might be made for fishing boats.

Mr. Young draws the following conclusions from the various evidence brought forward in his essay, which may be read at length in 'Fish and Fisheries' (Wm. Blackwood & Sons, Edinburgh).

1st. That the harbour accommodation on the east coast of Scotland is inadequate to the increased and increasing size of the boats and the expansion of the fishing industry.

2nd. That, taking the various localities near the inexhaustible fish supply of the North Sea, that locality which provides the best harbour will be almost certain to have the best fishing.

3rd. That in the great fishing centres, such as Aberdeen, Fraserburgh, and Peterhead, there is no great difficulty in raising money for harbour improvements on the security of the harbour dues ; and that the real practical difficulty meets us when we come to think how to raise money for harbour improvement in the case of smaller places near good fishing grounds, such as Eyemouth, Banff, Cullen, Lybster, Helmsdale, &c.

4th. That we imperatively need, and are entitled to demand, from Government, considering the vast sums spent on harbours of refuge in England and Ireland, one harbour of refuge at least on the east coast of Scotland for the protection, not only of the fishing fleet, but also of the mercantile marine; and that the proper place for that harbour of refuge is the bay south of Peterhead, midway between the Firth of Forth and the Cromarty Firth.

In these conclusions the writer would wish to record his entire agreement with Mr. Archibald Young.

The report of the Scotch Fishery Board for 1880 states the yield of herring to be 1,473,600 barrels, at 25s. per barrel; this branch of fishery in Scotland yields £1,842,000.

The great increase in the average annual yield of the herring fishery since 1866, is, Mr. Young states, "coincident with the extension and improvement of the fishing-boat harbours at Aberdeen, Peterhead, and Fraserburgh, and the construction by the late Mr. Gordon, of Cluny, of the excellent harbour at Buckie on the Moray Firth." In a money point of view alone, a stronger point of argument for new harbours, and the extension and improvement of those already existing, could hardly be brought before the attention of the Government. This is omitting any humanitarian views and regard for value of boats and gear, which should also likewise carry considerable weight.

WEST COAST OF SCOTLAND.

Nearly the whole of the west coast of Scotland, from Cape Wrath to the Clyde, is so broken and indented with fiord-like lochs at intervals, forming so many good harbours, that there is not that extreme need for artificial shelter which exists on its eastern and northern coasts; the

Hebrides or Lewis Islands, Mull, Skye, Jura, &c., all partake more or less of the same characteristically indented outline of coast; a few piers and quays, therefore, for landing fish, are more frequently required than very extensive breakwaters to provide shelter.

WEST COAST OF ENGLAND AND WALES.

ISLE OF MAN.

It may be as well, before advancing farther down the coast, to mention the Isle of Man. The harbours of this island are all tide-havens, having naturally no water in them on the ebb, but the streams of fresh water at the *embouchures* of which they are found. Of late years, as elsewhere, the boats have much increased in size, and the decked Cornish lugger is becoming more in use as a fishing boat of the island.

They all require improvement by extension, and conversion into floating harbours, at all events in their outer parts. Their names are Ramsey, Douglas, Peel, Derby Haven, Port St. Mary, Castleton, and Port Erin. The larger boats all partake of the Irish and Scottish fisheries, for mackerel and herrings. Mr. E. W. H. Holdsworth, 'Deep-sea Fishing and Fishing Boats,' gives as the number of fishing boats at Castleton, Douglas, and Ramsey, which include the other places, in 1872, first-class boats 227, second-class 82, third class, 66. Herrings, cod, whiting, conger, and flat fish, are all taken, also trawl fish, and some haddocks.

WEST COAST OF ENGLAND AND WALES.

From the Solway Firth to the Isle of Anglesey the harbours seem adequate for the fisheries, which are not

followed so extensively as farther down the coast. From the great improvement of the harbour of Barrow-in-Furness, a town of quite modern creation, this may become a trawling centre. There is much fish on the south-west side of Anglesey, and an acquaintance of the writer's is endeavouring to establish a general fishery at Aberffraw Bay. A moderate outlay here in the form of a harbour would probably develop a considerable fishing trade.

CARDIGAN BAY.

Every harbour here having a bar at its entrance, this bay is not regularly worked, although visited by trawlers from Liverpool. It is frequently visited by quantities of herrings, and being 60 miles across from Strumble Head to Bardsey Island, very much more fishing might be done in it if it had two good harbours. A breakwater at St Tudwall's Road would provide a fishing and refuge harbour which would be much appreciated; it requires protection from the south-east.

FISHGUARD.

Fishguard, near the southern termination of Cardigan Bay, between Strumble Head and Newport, has a considerable bay, and has received much attention from the fact of the good shelter it affords from west, south, and east gales; roughly speaking, it forms three sides of a square, and is only open to the northern quarter of the compass.

The western horn of the bay of Fishguard runs well to the northward, and within the bay there is in general a sufficient depth of water for large ships, and a good bottom

consisting of sand mixed with clay beneath, without stones. With the exception of a few rocks near the Cow Rock, always itself above water, within Anglass Point, the bay is clear of hidden dangers. There is a small inner harbour or tide-haven.

On account of its general advantages it has been recommended as an excellent site for a harbour of refuge by the Commissioners on the subject. A very considerable trawl and drift-net fishery might doubtless be carried on from here.

THE BRISTOL CHANNEL.

Tenby is a dry harbour, with much trawling ground in the vicinity; if extended and converted into a floating harbour the fishing could doubtless be more extensively followed; drift-net fishing for herrings also would increase.

BIDEFORD BAY.

Crossing the Bristol Channel to Bideford and Barnstaple Bay, we arrive at a great autumn and winter resort of the herring, but without any good harbourage for fishing craft. Notwithstanding the capacious apparent area on the map of the rivers Taw and Torridge, which unite at Appledore in a spacious estuary, they form a very dangerous harbour, having a very bad bar, entirely exposed to the N.W.—*i.e.* to the ground-swell from the Atlantic. This sometimes for a whole month breaks so violently on the bar that vessels neither enter nor depart from the harbour. This renders it almost useless as a fishing port, in addition to which the tides of both ebb and flood run with the strength of mill-streams.

In the Bay towards Hartland Point is the small dry harbour of Clovelly, out of which the herring and crab

boats work ; but long before low water the harbour is left dry, and if the boats are caught in bad weather before the tide rises, they are exposed to great risk, as they cannot enter until the flowing tide has considerably risen. The herrings are accompanied by hake, cod, and conger, consequently in favourable weather much valuable fish can be caught. If a good harbour were built here, accessible at low water, a larger and more powerful class of boats might be used, and the supply of fish very much increased.

NORTH CORNISH COAST.

Port Isaac is a cove on the north coast of Cornwall, but, having no artificial protection, the fishery cannot be followed as it might be.

The enclosure of the cove by piers, and its conversion thereby into a harbour, would allow of vessels instead of boats being used, and much trawling might be done on ground rarely if ever worked.

At Newquay is a dry harbour capable of extension, from which would follow extended fishery operations if vessels could depart and arrive at all times of tide.

PADSTOW.

In the *Western Morning News*, March 24, 1883, appeared a fourth article, one of a series, on the subject of "The Proposed Harbour of Refuge," in regard to Padstow :—

"The feature to which most importance is attached in favour of a harbour of refuge at Padstow, is that it is so centrally situated between Hartland Point and the Land's End. Having regard to the stretch of rockbound coast, a dead lee-shore during the heaviest and most dangerous

gales, the Commissioners did not hesitate to say Padstow would make a valuable life harbour for the coasting trade but for the dangerous nature of its entrance in heavy weather." The danger arises from the following local features, for the channel is bounded on the east side by a large extent of sand, called the Doom Bar, and on the west side by steep cliffs. Vessels lose the wind after getting under this land, which also is very baffling, and if late on tide they may be set on the sand and wrecked, without power to anchor and prevent it.

"A part of the hill which causes the wind to baffle has been lowered, and vessels are thus able to have longer benefit of the wind, so that they can by its aid fetch in seventy fathoms further; several thousand pounds have been spent in reducing the height of this bluff, and to complete this work, and otherwise improve the Channel to the harbour, £40,000 are estimated as requisite."

"Admiral Washington was very emphatic in his report on this harbour. 'It was the only harbour, he pointed out, in a long line of coast, that offered a depth of 16 ft. at low water, with a rise of 22 ft. at springs, so that there are few vessels which navigate the Channel for which it might not be considered a refuge harbour accessible at all times of tide. This, said the Admiral, was an advantage that no harbour could boast of on this coast from the Land's End to Bristol; and again on the coast of Wales, from the Severn to Milford Haven, where all are tidal harbours.'"

The writer strongly recommends the further improvement of Padstow Harbour, both in the interest of humanity and in regard to the fisheries, for boats or vessels which find themselves to leeward of St. Ives may fetch into Padstow.

ST. IVES.

In the *Western Morning News* of March 22, 1883, appeared the following remarks on the fishing industry of St. Ives : " The existence of the residents is almost wholly dependent on the fishing industry. The boats number closely on 300, and the total value, including the nets, is set down at not less than £70,000."

" With this capital at stake, and with an enforced reliance on what the sea provides them with for their subsistence, it can be well understood that, failing adequate harbour accommodation, the fishermen are not unequivocally happy."

From the *Western Morning News* of March 21 the writer extracts the following : " Among the eleven places recommended by the Royal Commission of 1859 as eligible sites for harbours of refuge were St. Ives, on the north coast of Cornwall, and Filey, on the coast of Yorkshire."

" The Commission further suggested that for the provision of these two harbours money should be advanced from the Consolidated Fund without any repayment from local sources, the amount named in respect of St. Ives being £400,000. The fact that it was stipulated as desirable that no local support should be asked towards the proposed structures specified—as distinct from other sites—was universally interpreted as meaning that the Commission regarded the St. Ives and Filey harbours as so important that they would serve a national and not merely a local purpose. In support of this attention is directed to the report of the Commission, where it is pointed out that St. Ives is contiguous to the great highway of all ships entering or leaving either the English, or the Irish, as well as the Bristol Channel."

" This being the case, it is held that to vessels from Liver-

pool and to the Irish ports, bound southward, disabled and distressed, a harbour at St. Ives would prove a valuable asylum, and to vessels bound either up or down the Bristol Channel caught with a north-west gale, on a lee-shore, as is often the case, St. Ives would be of the greatest importance. Now, if all this were true 20 years ago, is it not equally true now? And has not the contention then set up gathered force with the effluxion of time consequent upon the increasing magnitude and value of the mercantile marine? Undoubtedly a stronger case could be made out for St. Ives now than 20 years ago. But, notwithstanding this, the public will have seen that, practically, St. Ives has up to the present time been ignored, whilst the recommendation respecting Filey, where the Commission advised an expenditure of £800,000, has been accepted. Let us see how far the circumstances of St. Ives and Filey are analogous. The authorities who have the decision of this matter are, of course, largely influenced by the returns of the wrecks on the respective coasts. Taking these into consideration, it could be easily demonstrated that there is a pressing need for a harbour of refuge at Filey or somewhere on the Yorkshire coast."

"In comparing the wreck roll of that stretch of sea-board with the north coast of Cornwall it is a common practice to limit the figures for the latter to the area from the Land's End to Hartland Point, including the Scilly Isles, and for the former to within the area from the Fern Islands and Flamborough Head. Judged simply in this way the claims of Cornwall do not bear favourable comparison with Filey. But it may be argued, with much justice, that the comparison is not a fair one."

"In dealing with the north coast it is contended that the area to be embraced should be that within the Land's End and St. David's Head, which is about the same distance as

that from the Fern Islands to Flamborough Head. A special reason why it is thought the point should be fixed at St. David's instead of at Hartland is because of the number of vessels coming down from Liverpool, to which the Royal Commission made particular reference."

"Taking these equal distances, how do the wreck returns for 1881—the last issued—compare? The following tabulated statement of the total losses, compiled from the Board of Trade report, shows the desirability of a harbour of refuge on the north coast of Cornwall :—

	Fern Islands to Flamborough Head.		Land's End to St. David's Head.	
1880-81 99	..	70
1879-80 16	..	28
1878-79 57	..	61
1877-78 60	..	81
1876-77 86	..	91

"The argument on behalf of the north coast of Cornwall is further strengthened by the subjoined returns of minor casualties.

	Fern Islands to Flamborough Head.		Land's End to St. David's Head.	
1880-81 97	..	260
1879-80 54	..	169
1878-79 95	..	175
1877-78 112	..	235
1876-77 120	..	336

"If figures are to be accepted as the criterion, the case of the north coast is conclusively established. It may be said by way of deprecating their force, that the Severn offers a natural refuge for vessels coming down from Liverpool or anywhere above St. David's; but to this the reply is given by practical men that such are the conditions that they are often unable to run into the Severn. If a vessel has passed it she could not well put back in the event of a south-westerly gale springing up, but it would be possible for her to bear up for a harbour of refuge on the north coast of Cornwall."

"Failing such a harbour, the voyage down the Bristol Channel is frequently of a most perilous nature, vessels being driven at times all the way around the Land's End and on to Falmouth for shelter."

"The geographical position of St. Ives is perhaps its main recommendation as a site for a harbour of refuge. But there are other advantages which the advocates of such a harbour put forward. All the witnesses examined in 1856-57 impressed on the Select Committee the fact that the bay is sheltered on three sides, and that all that is wanted to make its natural capabilities complete is that protection against northerly winds which should be artificially provided. The bay is three nautical miles wide, the depth to low water-mark $1\frac{1}{2}$ miles, to high water-mark 2 miles. In the middle of the bay the depth of the water is 10 fathoms, with good holding ground."

The manner in which the requisite protection might be obtained has been defined by Captain Vetch, R.E., F.R.S., who gave valuable testimony for the St. Ives project.

He has suggested throwing out a pier north and south 2,000 feet long, "which would be a complete shelter from every wind that could blow."

"The estimates then furnished amounted to £174,000, but he affirmed that if the proposal were carried out to half the extent proposed, it would be the means of preventing many shipwrecks."

"Captain Washington, R.N., F.R.S.; Captain J. Sullivan, R.N., C.B.; Captain James Hosken, R.N., and Mr. (now Sir John) Coode, C.E., attested with equal emphasis the capabilities of St. Ives; and in addition to their testimony, it is locally submitted as a feature of considerable moment, that extensive quarries of granite are available near at hand

suitable for the facing of quays and piers, and an abundance of greenstone for the exterior work.

Few persons, if any, worked more continuously or more intelligently in the hope of a harbour of refuge being constructed at St. Ives, than the late Mr. John Tremearne. He devoted a great deal of the latter part of his life towards the furtherance of the object, and, as a result of the interest he took in the cause, we are enabled to judge of the tidal influences of the locality."

"The tides run nine hours in a northward, and only three hours in a southward direction, varying their courses from north-west to north-east. The velocity at the Land's End and the Rundle Stone is from two to four and five miles an hour, according to spring or neap tides."

Mr. Tremearne showed that "the influence of the northern stream extends to some distance south of Scilly Islands, affecting vessels running to make Scilly. When thick weather prevails this carries them to the northward of the Land's End, into the north channel, before they make the land, particularly when southerly or south-east winds prevail."

"When the tide is half-ebb in Mount's Bay it turns to the westward, altering its course to the northward as it nears the Land's End, continuing its course for nine hours, therefore giving every facility for vessels coming from the English Channel to the northward of the Land's End. All this tends to show the advantages to be derived from the construction of a harbour of refuge in the Bay of St. Ives."

"As regards the fishermen, Mr. Ross, M.P., aptly represented their condition when he told the House of Commons it was absolutely deplorable. In the absence of a harbour of refuge, they are often deterred from putting out to sea to pursue their calling. This has been a truism for years, but the drawbacks that have been experienced have been

materially augmented by the gradual decay of the pier, a wooden structure, apparently intended to last only for a time, until sufficient funds should be available for the construction of works of more abiding materials."

Mr. Edward Hain, Junior, a resident at St. Ives, wrote a very important letter in connection with this subject, which appeared in the *Cornish Times*, April 5, 1883. Amongst other matters he states: "There are now in St. Ives pier over 100 boats, equipped for the spring mackerel fishery, equal to £35,000, entirely at the mercy of any gale of wind from N.E. to S.E., and should such a gale arise, the destruction of property would be very considerable, and a large number of men might be prevented from earning livelihood during the best season of the year. They are afraid in many instances to venture to sea, lest a gale should spring up on the low water, and find them without shelter. Thus many thousands of pounds are lost to the fishermen themselves, and a valuable food supply lost to the nation."

The question of harbour accommodation at St. Ives has been agitated for nearly 150 years.

"In 1776, Smeaton, reporting on the practicability of making St. Ives Harbour safe for ships in all winds, concluded by saying, 'In short, every circumstance seems to invite the completing this harbour for the safety of ships, when nature has been so bountiful.'"

"In 1847, Captain Vetch, R.E., sent to the Admiralty a most exhaustive and valuable report in favour of a harbour of refuge in St. Ives Bay. Several other reports from eminent engineers have been given to the same effect, and the Select Committee of the House of Commons in 1858 endorsed those opinions, and recommended that a grant of public money be made for the purpose of building the required harbour, but nothing has yet been done."

The concluding words of the report of this Select Committee are worth repeating just now, when another Committee is about to sit :—"Your Committee feels that it may be laid down as an indisputable axiom, sustained by experience, especially of late years, that while the extent of our coasts and the natural facilities they afford for navigation are limited, the trade of the country, and consequently its shipping, are capable of and destined to an indefinite expansion, and that the only way, therefore, by which the former can be rendered commensurate for the requirements of the latter is by supplementing the natural facilities which we possess by the construction of great national works upon our coasts, such as your Committee have ventured to recommend."

St. Ives refuge harbour, from the nature of its position, we have seen would be both a fishing harbour and a port of refuge for passing vessels, serving both a national and a local purpose ; on this account the writer is strongly of opinion that the enclosing breakwaters should be built at the national expense, but that any special construction for fishing boats should be charged as a loan at 6 per cent. interest, 3 per cent. being esteemed interest on the loan, the other 3 to remain payable in diminution of the loan until cleared off.

PENZANCE, MOUNT'S BAY.

A harbour of refuge has long been proposed here, on account of the exposure of the anchorage in this bay to the south-east gales. The numbers and size of the fishing boats have much increased, and the small harbours are often crowded, and dangerous to take in a gale for want of some outside shelter to break the force of the sea before approaching their entrances. The breakwaters of a refuge

harbour, if judiciously placed, might effect this for two at least, if not more, of these harbours, namely, Newlyn and Penzance, and thus be of very great benefit, as well as to shipping taking refuge only.

It is to be hoped at some future time a serviceable breakwater may be built, but the claims of St. Ives will probably first be attended to, on account of its deplorable condition.

BRIXHAM, TORBAY.

This is a very important fishing station, having about 140 trawling smacks belonging to it, and as many as 100 often arrive in one day. It has a dry harbour, and an anchorage outside, locally called the Sedge, where the trawlers have heavy moorings laid down, and where, being sheltered from the prevalent south-westerly winds, they ride safely enough unless in a gale from the east and south-east.

Torbay has always been a favourite anchorage for passing vessels, when opposed by strong westerly winds. Being about 4 miles wide at the entrance, of moderate depth, and having good holding ground, it has always been much frequented; but being entirely exposed to gales blowing between eastward of south and north, great vigilance is required in watching the weather and wind.

In the winter of 1866 a most fearful catastrophe occurred in Torbay, through a furious gale suddenly springing up from the most exposed quarters, which caught forty-two vessels at anchor in the bay, awaiting a change of wind from the western to the eastern quarter. The west wind had fallen away to a calm, and the gale from the opposite quarter caught these vessels before they had opportunity to attempt to escape down channel. Two schooners only succeeded in so doing, and of the forty,

thirty either foundered at their anchors or went on shore at different parts of the bay, some on the rocky foreshore and a few on the sand beaches. Eight Brixham trawlers, with the wreckage of other vessels, were destroyed at the Brixham pier on the outside ; several persons were saved by great exertions, but it is believed that at least 72 persons lost their lives. Had an efficient refuge harbour existed off Brixham, it is certain that the majority of these casualties would not have occurred. An outer breakwater at Brixham has been many years in progress by the harbour authorities at Brixham, to shelter the trawlers' mooring ground, as before mentioned, known as the Sedge, but their work is frequently injured and partly undone, and if they do not receive more assistance than the locality can afford, its completion appears likely to be delayed to a remote future.

The late Mr. Rendel, C.E., projected in 1844 a plan for a harbour for vessels of 14-feet draught, and its breakwater was to have started from Shoals Point, enclosing 115 acres between 4 and 1 fathom depth close to the shore. Although this would be a great boon, it is of too limited proportions to accommodate the large class of steamers now in use ; and as the question is a national as well as a local one, the funds should be provided by the nation unless special work were required for the fishing vessels, which, however, the harbour trustees would probably do when required.

OTTERMOUTH HAVEN, SOUTH DEVON.

This much obstructed inlet is 4 miles east beyond Exmouth, and a very great abundance of herrings is frequently found in the bay to the eastward. It is a very exposed coast, in consequence of which the boats which

resort there from the surrounding fishing towns are liable to great risk if a gale springs up from seaward.

There are only at high-water spring-tides 7 feet 6 inches on the bar. Some improvement has been made, but not on a sufficient scale to deepen the entrance, which, if made good, would accommodate inside hundreds of boats in the estuary of the river Otter. The expense would be too great to provide the means locally, but the writer would recommend a Government loan, on the extinguishment principle, at 6 per cent., 3 to be devoted to clearing off the loan. Thousands of pounds' worth of herrings alone might be caught here if the harbour had at the entrance 3 or 4 feet depth at the pier head at low water, the same depth being made good to the inside; rise of tide, 12 feet 6 inches at springs. This river Otter is half-a-mile east of the picturesque watering-place, Budleigh Salterton, and is on the Rolle Estate.

BOGNOR, SUSSEX.

Bognor rocks run off the coast about a mile, and form a natural breakwater, under which coasting vessels often anchor in west winds.

A good fishing harbour could be made here by raising on the reef of rocks, and running out a breakwater to afford shelter from south and east.

Every harbour along here being barred, one with a deep-water entrance would be certain to become a considerable fishing station.

IRELAND, EAST COAST.

Rosslare Harbour was commenced many years since, and is situated not far from the Tuskar, off the south-east extremity of Ireland:

There are abundance of fish off this coast, and it certainly should be completed.

It would be a deep-water harbour, and would become doubtless a mail packet station ; thus vessels could find a haven without attempting Wexford, which is almost choked up with sand. It was thought better to build Rosslare than to attempt the improvement of Wexford.

Arklow, Wicklow, Malahide, Rush, Skerries, Balbriggan, Drogheda, Dundalk, and Dundrum, should all be converted into deep-water harbours. There is a great development of fishing on the east coast of Ireland, and Ardglass is the best fishing harbour on the whole.

At Cushendall, Red Bay, would be a good locality for a fishing harbour.

GOVERNMENT POLICY.

The writer on this subject recommends the advance by Government of money at 6 per cent., 3 per cent. as interest, the other 3 to be devoted to clearing off the loan in a series of years.

If work is commenced within two years of receiving the money, the loan to be continued until extinguished by the 3 per cent. interest ; if not, the money must be returned. Security for this must be found locally.

FISHERY HARBOUR BOARD.'

A regular Board should be established to deal with application for aid in harbour construction and extension.

Two marine engineers to be members.

Two naval officers, not below the rank of navigating lieutenants.

Two merchant commanders.

Four other gentlemen, if possible acquainted with the usages and requirements of fishermen.

N.B.—One of the engineers, if possible, to be practically a seaman.

Business to be legally transacted by half the number. The applications to be forwarded to the Houses of Parliament.

Evidence as to the desirability of any harbour work to be taken in the locality before any two justices of the peace.

Attendance of witnesses in London not to be compulsory.

No Act of Parliament to be necessary for an estimate under £10,000.

N.B.—Expenses of obtaining Acts of Parliament are too great for small fishing ports.

LIMENOMETRY, OR THE GENERAL PRINCIPLES OF THE SCIENCE OF HARBOUR DESIGN AND CONSTRUCTION.

THE designing and construction of artificial harbours is confessedly the most difficult branch of the profession of the civil engineer, for in this work he is brought into conflict with those two powerful elements, wind and water, which combine together to assault, and not in a few instances to overthrow in a few hours the results of the labours, it may be, of years, the outcome of much anxious thought and ingenious design.

The designing and building of harbours may be looked on as a special branch or art of the civil engineering profession; in the present essay, therefore, it is the desire of the writer to endeavour to collect together as a science, in conformity with part of the subject proposed by the Committee, for this essay, "The general principles on which

harbours should be constructed," as defined by celebrated and successful engineers, together with such observations of his own as he may have made at various localities on the coast during many years.

For the science teaching the general principles of harbour design and construction the writer, if he may not be considered pedantic in so doing, would propose the term "Limenometry," from the two Greek words, *λίμην*, a harbour, and *μέτρον*, measure or proportion; and as we have such terms as geometry, trigonometry, &c., the writer thinks he may venture to add the word "Limenometry" to the English language.

REQUISITES OF A FISHING-BOAT HARBOUR.

In his prize essay on 'Harbour Accommodation for Fishing Boats on the East and North Coasts of Scotland' (International Fisheries Exhibition, Edinburgh, April, 1882), Mr. Archibald Young, Inspector of Salmon Fisheries for Scotland, mentions that the requisites of a fishing-boat harbour were defined by the Commissioners employed on the last inquiry into the Scotch herring fishery, to be as follows: "The requisites of a perfect fishing-boat harbour are an entrance which will allow the boats to have free access and egress at all times of the tide; perfect shelter within the entrance; sufficient space for all the boats that frequent the place to lie together without crowding or jostling; enough depth of water in every part of the harbour to enable them to be afloat at all times of the tide; and proper facilities for taking in their nets and gear and landing their fish."

Mr. Thomas Stevenson thus defines a good harbour: "The combination of the qualities of an easy and safe

entrance and exit, with a good 'loose,' and a smooth interior, alone constitute a good harbour." A good "loose," *i.e.* a good point of departure, so that vessels on leaving the harbour shall be able to shape their course free of rocks, or a lee-shore (page 115, 'Design and Construction of Harbours.' Adam & C. Black, Edinburgh). Page 2 : "In making such designs, the engineer, of course, avails himself of the advantage which is to be derived from past experience, and endeavours, to the best of his power, to institute a comparison between the given locality and some existing harbour, which he supposes to be similarly situated."

"Perfect identity, however, in the physical peculiarities of different stations seldom, if ever, exists, and all that can be done in deriving benefit from past experience is to select the harbour which seems most nearly to resemble the proposed work."

THE FEATURES OF THE PRINCIPLES OF SHELTER AND TRANQUILLITY IN NATURAL HARBOURS.

Before entering on the work of designing harbours, it is absolutely necessary that any engineer should have a clear conception and definition in his mind of the principles of shelter and tranquillity. These can be observed and studied out first in a good natural harbour, and afterwards it will not be difficult to recognise the realisation of these principles in a harbour artificially constructed, and also afterwards to embody them in the projection of any harbour design. Different localities will, of course, require different treatment in detail, each according to its natural features, but the principles of tranquillity will be the same in all, however varied may be their application, and the

required conditions of tranquillity may be briefly summed up in the few following words: *sufficient shelter from external disturbance, and adequate internal capacity for the subsidence of such amount of undulation as cannot be excluded.*

In a good natural harbour we find the principles of shelter and tranquillity made evident to us by an elaborate system of successive points or breaks, each followed by an expanding area, which allows the undulation of the water to spread, after its violence has been broken by the preceding point.

It is manifest that we cannot in an artificial harbour adopt that irregularity of outline which, by offering a long succession of points and bays to the action of the advancing swell, gradually dissipates and pacifies the disturbance of the ocean, but we can nevertheless adopt the principles which nature inculcates, and show their application to artificial harbours as far as the extent of any proposed works will permit.

As an example of a good natural harbour, the writer has selected that of Dartmouth, as it furnishes us with instances of those prominent features in which reside the principles of shelter and tranquillity, and to which we will now give our attention in the chart of that port.

We have, outside the entrance, various rocks, both islet, smaller insulated, and sunken, either above or below the water, the large rock or islet known as the Mewstone, 125 ft. high, the Verticles, Bear Tail, and the Froward Points, on the east, with Combe Point and rocks, &c., on the west side, which, when the wind is either to the eastward or westward of south, serve to break the force of the waves and much smoothen the water; but in a southerly gale, with which we have now to deal, being the point

of maximum exposure, the effects of the features of the locality in respect of the system of shelter, may be said to commence with the Blackstone, Compass, and Middle Froward Points, from whence the undulation proceeds onwards, diminishing gradually, as it is broken by every successive point, and expands into every succeeding bay.

At the bottom or most seaward limit we have the largest wave, as a matter of course, the eastern end of which, striking Middle Froward Point, parts with a small portion of its violence; at Inner Froward Point it loses a little more, and again at the Blackstone Rock; but the forces are partly again united behind it, leaving a portion of water under its lee in a state of less comparative disturbance. At Compass Point we have another break to the wave, which at its eastern end curves round towards the deeper indentation or bay, included between a straight line drawn from Inner Froward to Kettle Points, and the east coast of the Range known as Mill Bay. We are now, however, at the narrows of the entrance of the harbour, and begin to initiate our second principle in addition to that of protection, namely, the principle of expansion, which is evinced by the action of the undulation spreading into this bay, namely, the first inside the Narrows.

Between St. Petrock's and Kettle Points is the narrowest part of the channel, and from the little distance between them they are, of course, more effectual in breaking the force of the sea than any other features we have hitherto noticed; and behind St. Petrock's, in particular, the difference in the agitation of the water is very marked from its prominent position, jutting out as it does at right angles to the line of maximum exposure.

Proceeding up the harbour from St. Petrock's Point, the shores diverge greatly from each other, and offer an increased area to the undulation, which accordingly expands itself, curving round with decreasing force towards the shores, right and left, beyond a line which may be drawn north from Kettle Point, which would be parallel with a long line of greatest exposure from the south.

At Warfleet Cove the area of this portion of the harbour is again increased by a considerable indentation of the shore, which the undulation at once seeks out, and expands into, after passing the first point of the Cove.

A straight line drawn from the seaward point of Warfleet Cove parallel to the line of maximum exposure, *i.e.* from the south, would cut the shore at Dartmouth, leaving the whole space westward of it considerably out of the line of greatest exposure, and under the shelter of the St. Petrock's land ; the undulation has therefore been very much broken by this protection, beyond which it diminishes but little until meeting with the resistance of Kingswear Point, which opposes a most effectual obstacle to the force of the waves, partially weakened by the preceding points, and from which, the undulation remaining, diffuses itself over the area of the reach of the river above the point, and opposite the upper part of the town of Dartmouth, which position is perfectly land-locked from the fury of the line of greatest exposure from the south.

The writer of this essay might adduce other harbours in illustration of the principles of the natural system of shelter offered to our observation on other positions of our coast-line, but refrains from so doing, considering one to be sufficient for our purpose ; for if we can only thoroughly analyse the system of shelter in a good natural harbour, and comprehend the principles by which this shelter is obtained, we

shall not be at a loss to apply them to the projection of an artificial harbour.

REDUCTIVE POWER IN HARBOURS.

In designing a harbour the engineer will, as a matter of course, endeavour to make his work as perfect in shelter and tranquillity as possible, to which end the waves should be reduced in height with all speed after passing the seaward extremity of the work. This feature may be looked on as the chief requirement in harbour design, and the faculty which any particular harbour possesses in this respect is termed its *reductive power*.

The reduction of the waves when they are deflected from their original direction, and made to diverge into sheltered water, is particularly adverted to by Mr. Thomas Stevenson, p. 118, 'Design and Construction of Harbours,' and he observes : "When a wave encounters an obstacle such as a breakwater, if we suppose the portion which strikes it to be annihilated by the impact, or to be reflected seawards, the portion which is neither destroyed nor interrupted will pass onwards, and a part will spread laterally *behind* the breakwater."

Again, at p. 119, he says : "When the waves are deflected by a pier with a free end, and run along its inner side, the reduction which they suffer will be due to the distance passed over, and to the angle of deviation produced by the pier."

At p. 120, also : "The ultimate object of every harbour is to preserve the tranquillity of the inclosed area by lowering the height of the waves as they enter, and this property is variously possessed by harbours of different forms, and depends on the relative widths of the entrance and the

interior, the depth of water, the form of the entrance and the relation between the direction of the entrance and that of the line of *maximum exposure*."

ON THE DIFFERENT CLASSES OF HARBOURS.

In this division of the subject Mr. T. Stevenson gives us the following description, to which the writer will make a few additions *en passant* :—

1st. "*Harbours of refuge and anchorage breakwaters*, consisting of one or more breakwaters so arranged as to form a safe roadstead, which shall be easily accessible to the largest vessels in all states of the weather and tide."

"A breakwater forms a barrier either complete or partial to the progress of the waves, and is intended to shelter anchorage ground under its lee. It is not used directly for commercial traffic as piers or quays are, and therefore a parapet is not necessarily required for preventing the waves from breaking over the top." Breakwaters are either insulated from or connected with the land, or combine both properties; of the first kind we have instances at Plymouth and Cherbourg, of the second at Holyhead, and of the third at Portland, which has a passage through it near the land.

2nd. "*Deep-water and tidal harbours for commercial purposes* (Fig. 1, *a* and *b*, facing p. 80).—A harbour for commercial purposes is any arrangement of piers or breakwaters, or of both, which incloses and so tranquillizes a sheet of water that vessels may be moored at the quay walls or wharfs which form the inner sides of the piers. Where the coast-line lies open to a heavy sea it is often found necessary to make a double harbour (Fig 1, *b*, facing p. 80). In such

case the entrance to the inner basin is situated within the sheltered area formed by the outer works."

Tidal harbours are such as can only be entered and departed from by aid of the tide, and are either natural, being formed in the mouths of rivers, or artificial enclosures by one or more piers. Tidal river harbours have in many instances been vastly improved by judicious engineering, but in others have formed very difficult problems for the solution of the engineer.

3rd. "*Kanted or curved piers* (Fig 1, c, facing p. 80):—Where there is a single pier of this kind, vessels lie under the lee of the kant or kants, and the sheltered side of the pier is therefore finished as a quay. The pier may have a double kant, or cross-head, built at right angles to the main portion, so as to give the structure the form of the letter T; at one side or the other of which, according to the direction of the wind, vessels can always find shelter." These and the two following kinds of works about to be noticed are for the most part erected in localities where more or less natural or artificial shelter already exists, as it is manifest that on an entirely exposed coast the positions would be untenable by any vessel in gales of wind.

Regular traffic with merchandise cannot of course be carried on from these works in the open sea, but during summer much passenger excursion traffic may be done in fine weather; but the proprietors of such piers obtain much of their returns from promenaders, where the piers have been erected at well-frequented watering-places. "We propose to term the seaward extremity of any single pier its *free end*, as there is an expanse of open sea all round it, in contradistinction to the seaward end of a close harbour, where the sea-room is limited to the breadth of the entrance, which is always kept as narrow as is consistent with the

safe passage of vessels. Both extremities of all single isolated breakwaters are, of course, free ends, as are also the seaward ends of all single breakwaters which are connected with the land."

4th. "*Straight piers* (Fig 1, *d*, facing p. 80).—A straight pier generally projects, at right angles, to the coast-line, with a free end at its seaward extremity, and, unless when the wind blows right in upon the shore, will always afford some shelter on its lee-side. In order to get the full advantage of this kind of pier, both sides are sometimes finished as quay walls, and the parapet, if there be one, is built in the middle of the roadway."

5th. "*Quay or wharf* (Fig 1, *e*, facing p. 80).—A quay wall is usually built parallel to the line of the shore. It affords no shelter of any kind, and the only advantage which it possesses is that of enabling vessels to load and unload without their having to beach, or where the shores are steep, even to take the ground."

"The same object may also be effected by an open framework of timber piles—by a suspension bridge, with a wharf at its outer end—or by a floating pier, rising and falling with the tide, and connected with the shore by a bridge."

"It will be observed that all the kinds of piers or harbours just enumerated differ materially from each other in the amount of shelter which they afford, and are therefore suitable for places having very different degrees of exposure. In some places there are shores which lie open to the full fury of the ocean, while other parts of the same coast are protected in some directions by projecting headlands or islands. Then, leaving the main coast, we have the shores and bays of narrow sounds, whose breadths vary at different places; and, lastly, we have creeks so perfectly

land-locked as to afford complete shelter in the worst weather."

"In some situations the foreshore is steep, affording sufficient depth for heavy waves not only to reach the beach, but to tear up rocks at levels far above the high water-line ; while in others it is so flat and shallow as to form a natural breakwater for the protection of the coast. In some districts there are tides rising forty or fifty feet, in others not as many inches ; and lastly, we have differences in geological formation and in the tendency to deposit. Now, it is quite as bad engineering to adopt the cowardly and unjustifiable policy of erecting in sheltered seas works that are heavy enough for the open ocean, as, through ignorance or foolhardiness, to fall into the opposite error of designing works that are deficient in strength and efficiency. The very first step to be taken, therefore, is to select from the different classes of designs which have been enumerated the one which is best adapted to the features of any given locality. The engineer, in order to make this selection judiciously, must consider the following queries, keeping ever in view the essential elements of stability, expense, and convenience :—"

"*First.* Is the place so well sheltered naturally as to require no artificial protection of any kind, so that a quay without a parapet, or an open framework of timber, will be sufficient for vessels to lie alongside without risk of damage in all ordinary states of the weather ? Examples of such quays may be found in rivers and creeks, even where there is a considerable expanse of water, such as Greenock, Londonderry, and the like."

"*Second.* Is the place situated in a sound or estuary where the cross waves or those which come on to the end of the pier are small, owing to the estuary being narrow, and where the heaviest waves are those which assail the work

on its sides, so that a straight pier will be sufficient, of which Burnt Island in the Firth of Forth is an example ? ”

“ *Third.* Is it necessary to protect the berthage by means of a curved or kanted pier, as may be seen in many places where the sea is not very heavy ? ”

“ *Fourth.* Is it necessary that a space of water should be inclosed between two piers inclined to each other till they nearly meet, and admitting (through the narrow entrance thus formed) only a small portion of the outside wave, which is afterwards reduced by expansion into the enclosed area ? Examples of this may be seen at Ramsgate, and many other places on the coasts of Britain.”

“ *Fifth.* Must we have recourse to what may be called a *compound harbour*, consisting of one harbour within another, where the outside waves are first reduced by expansion into the area of the outer or stilling harbour, after which a yet greater reduction is attained by the second expansion of a portion of the reduced wave into the area of the inner basin ? Examples of such double harbours are common on all such coasts as are much exposed.”

“ After the engineer has satisfied himself as to the *general* character or class of design required, which is undoubtedly the principal question to be settled, he must next consider the details. Where the place is much exposed he must arrange the different parts of the design so as to produce a harbour which may be easily taken and left in stormy weather, without endangering the tranquillity of the internal area ; for it is the combination of these two qualities, of *easy entrance* and a *smooth interior*, which alone constitute a good harbour. Lastly, he must fix the width of the piers and height of the parapets, and assign the sizes and determine the arrangement of the constituent materials in such proportions as to ensure the stability of the work.”

“What follows is an attempt to assist the engineer in the solution of some, at least, of these and other questions affecting the construction of harbours.”

“The local characteristics which at the outset demand our consideration are—1st, the geological peculiarities of the shore ; 2nd, the exposure ; 3rd, the force of the waves due to the exposure ; 4th, the strength, direction, and range of the tides ; 5th, the depth of water of the bay or sea in which the harbour is to be placed ; 6th, the proximity of deep water to the pier itself, which of course depends on the slope of the fore-shore ; and 7th, the angle which the coast-line makes with the direction in which the heaviest waves come.”

Although by the terms of the competition no limits are set to the length of any essay, it is necessary that no essay should run to an unreasonable length ; the writer therefore is compelled to say, that extracts and remarks can alone be made, as it would be impossible in a moderate space to follow Mr. Stevenson or other engineers through the whole of their observations, for on this subject of the “general principles upon which harbours should be constructed,” many volumes have been written.

DANGER FROM CONCENTRATION OF UNDULATIVE FORCE OR GORGING.

In connection with this matter, Mr. Stevenson, p. 11, quotes Sir Henry de la Bêche, ‘Manual of Geology,’ p. 71. He says : “In many situations on the southern coasts of Devon and Cornwall, the slaty rocks dip in such a manner towards the sea that the waves have never effected more than the removal of some loose superficial matter, the same that covers all the hills in the vicinity. In fact,

a skilful engineer could not have protected the coast better than has been accomplished by the dip of the strata."

"This remark of Sir Henry's suggests another source of danger which ought not to be overlooked. If a sloping direction of the strata have the effect of reducing the force against the coast, by altering the direction of the surf, it is equally clear that where long ledges of rock cross the line of direction of a proposed pier, there may be expected an intensified action at the points of junction. Long ledges of rock, though affording useful shelter where the works run parallel with them, are therefore sources of danger where this parallelism cannot be preserved in laying out the lines of the piers. All attempts to carry works across those long narrow chasms which separate rocky ridges (ledges), or even to cross creeks of considerable width, must be regarded as peculiarly hazardous, and special provisions are required for resisting the concentrated action which is common to these and all such places where the sea is *gorged*."

"It must, of course, be understood, that cases occur when, in order to afford sufficient harbour room, or to effect some particular object, it becomes necessary to erect sea-works in situations where the pent-up waves must be fully encountered."

"The sea-wall of the Victoria Harbour at Dunbar is an instance of this kind, for the basin which had to be enclosed occupied the landward portion of a narrow creek. The outer wall has therefore not only to check, without any lateral relief, the whole of the waves, which formerly dashed into the creek, but, owing to the outline of the coast, it has also to encounter them nearly at right angles to their direction."

HEIGHTS REACHED BY THE SEA IN GALES AND STORMS.

"Mistakes as to the level of the highest tides are sometimes made by drawing too hasty conclusions from the presence of vegetable life. I have seen the thrift or 'sea-pink' (*Armeria maritima*), which seems to indicate unmistakeably the limit of the rise of the highest tide, covered, even in calm weather, sometimes to a considerable depth, during equinoctial springs."

"Where there is no opportunity of making tidal observations, the level of the *lepas*, or barnacle, which is generally very sharp and well defined, may be adopted. The highest level at which this shell-fish grows is about high water of the highest neap-tides, or of the lowest springs. Nor must the existence of grass and other land vegetation be regarded as any decisive proof that the surf never reaches it."

"I would also add a caution applicable specially to all inquiries regarding the occurrence of storms. It is a common and dangerous mistake to trust to the highest marks of the surf that may be visible on the beach, and which are probably the vestiges of gales that have occurred within the previous year or two. Any such experience as this is greatly too limited. There is a vast difference between a 'heavy gale' and a 'great storm,' such, for example, as that of January, 1839, when the wind assumed a force which has never since been equalled. Storms occur but seldom, perhaps not once in ten years, and very great storms are of even rarer occurrence, whereas hardly a winter passes in which one or two heavy gales do not take place."

LEVEL ASSUMED BY MUD A MEASURE OF
EXPOSURE.

"I have elsewhere referred," observes Mr. S. (Proceedings Royal Soc., Edin., vol. iv., p. 200) "to another feature which will be found of very considerable value in judging of the exposure of a coast. This is the *level below the surface of the low water, at which mud reposes.*"

"It may appear unlikely that the disturbance of the surface of the sea occasioned by storms should be propagated to great depths, but there is no want of evidence on this head. After easterly gales I have repeatedly seen rounded pieces of coal, containing nearly a cubic foot, thrown up on the beach of the Firth of Forth, near Newhaven. Indeed, the fishing population of the adjoining village are in the habit of turning out in search of fuel after every heavy gale. Mr. John Murray states that in the coal trade (of Sunderland) the ballast of the vessels returning to the north, which sometimes consisted of chalk and flints, was usually discharged at a distance of from seven to ten miles from port, instead of five miles as formerly; yet after a violent storm the whole coast was strewed with ballast, which had been cast into water ten fathoms at least in depth, and the flints were easily recognised as coming from the Thames (Inst. of Civil. Eng. Trans., vol. xix., p. 670)."

"Mr. (now Sir) J. Coode found from under water examinations made with the diving dress, that the shingle of the Chesil Bank, near Portland, was moved during heavy winter storms, at a depth of eight fathoms. Mr. E. R. Calver, R.N., states that he has seen waves six or eight feet high change their colour from the abrasion of the bottom, after passing into water of seven or eight fathoms. From these statements it may easily be inferred that *in*

exposed situations mud cannot repose near the surface. No one, surely, would expect to find a muddy shore confronting an open sea, where the deep water approached closely to the shore, though he would not express surprise at finding such a beach (or foreshore) on the borders of a land-locked bay or of a sheltered estuary. Although the *absence* of mud in any locality proves nothing, because the tide-currents may sweep it away, or the geological formation may not produce it, yet its *presence* seems both a delicate and certain test of the limits of the utmost possible extent downwards, to which the disturbance originating at the surface has reached. Within 25 miles of Whalsey, in Zetland, we find it in from 80 to 90 fathoms. In the latitude of Wick it occurs in from 60 to 70 fathoms below low water; in the latitude of Kinnaird Head, on the Norwegian side, in 40 to 50 fathoms; in the Moray Firth, abrcast of Banffshire, we find it in depths of about 35 fathoms; while as we proceed towards the more sheltered parts of that Firth, we find it rise within 20 fathoms of low water, and within the Dornoch Firth we find it within 16; and close in, under the shelter of the Sutherland shore, we find it in only 8 fathoms under the low-water surface. In the latitude of the Firth of Forth we find it in depths of from 30 to 40 fathoms; and proceeding up the Firth of Forth, we find it gradually rising nearer the low-water level, in proportion as the shelter increases, from 22 fathoms at Dunbar up to 3 fathoms off Leith; while beyond Queensferry we find the mud actually rising above low water, even although the current gets stronger, as we ascend the estuary."

"In the northern bottom of the Firth of Forth the mud gradually rises from 22 fathoms near Fife-Ness, up to 8 fathoms near Burnt Island; whereas near Leith it exists in

5 fathoms, which accords well with the known fact, that the heaviest sea passes on the north side of Inchkeith, and not on the south. If we return to the German Ocean, we observe that towards its southern portion mud is found within about 20 fathoms of the surface, and under the lee of the Dogger Bank within 15 fathoms ; and proceeding still further south, we find it on the coast of Holland at depths of 16, 15, 13, 12, and only 8 fathoms at the mouth of the Elbe."

"Now the violence of the waves upon the shores of the German Ocean certainly decreases in proportion to the rise in the level of the mud, there being a gradual decrease as we come from Whalsey, where, as will be afterwards shown, wonderful energy is displayed by the sea—to the coasts of Holland, where the waves are much modified. Although the flat-bottomed vessels of the Dutch are built purposely for resisting a heavy surf, still the fact of their being able to take the beach in nearly all weathers along that coast without any protection from harbours goes far to prove that the waves are much reduced before they reach the Dutch shore."

"In short, although in any parallel of latitude we shall find in the German Ocean almost every gradation of depth between the low-water margin of the shores where there is no depth at all, and the maximum sounding in the sea outside, yet mud nowhere appears to exist in shoal water in any place where there is a heavy sea."

"The same general result may be found on the west coast of the British Isles. While on the west of Ireland mud does not lie nearer the low-water level than from 40 to 60 fathoms, patches may be found on its eastern or more sheltered side, to the north of Dublin, at only 20 fathoms, and half way up Belfast Lough, where there is good shelter, it may be found at 5 fathoms below the surface."

"If, therefore, we find in front of a proposed harbour that mud reposes within a few fathoms of the surface, I believe we have in that fact certain ground for concluding that our works will never be assailed by a very heavy sea."

MAXIMUM RECORDED HEIGHT OF WAVES IN LARGE BODIES OF WATER.

"At the harbour of Lybster, Caithness-shire, the waves attained the height of $13\frac{1}{2}$ ft. ; maximum length of fetch, 600 miles. At Sunderland the waves were found to be also about 13 ft. high at the pier-head ; but the height was no doubt reduced by the shallow water near the shore. Commander Dayman observed that the highest waves off the Cape of Good Hope were 20 ft., and Mr. Cockburn Curtis says that the gales which produce these rollers extend to from 300 to 600 miles. Mr. N. Douglas saw waves of the height of 20 ft. off the Bishop's Rock Lighthouse. In the Atlantic Ocean Dr. Scoresby, when at sea, measured the waves with great care and accuracy on different occasions, and the greatest height he observed was 43 ft. (Rep. Brit. Assoc. 1850, p. 26)."

LINE OF MAXIMUM EFFECTIVE EXPOSURE.

"It does not follow, however, that the line of maximum exposure is in every case the line of maximum effective force of the waves, for this must depend not only on the length of fetch, but also on the angle of incidence of the waves on the walls of the harbour. What may be termed the line of maximum *effective exposure* is that which, after being corrected for obliquity of impact, produces the maximum result, and can only be ascertained from the chart by

successive trials. It should not be forgotten, in connection with this subject, that in some cases there are qualifying elements to which special attention requires to be given."

"The waves, for example, may often be noticed, when approaching the land obliquely, to alter their direction when they get close to the shore, in consequence of the depth changing, and from this cause they strike more nearly at right angles to the general line of the beach. Although experimental observations are still wanted, we are not without practical proof of the reduction of the force of the waves where the obstacle lies obliquely to their direction. At the harbour works of Lybster, in 1851, during the erection of the pier-head, which stands parallel to the waves, occasional damage took place, and during one gale three stones, about a ton each, were thrown down, while the wharf wall immediately adjoining, which was parallel to the motion of the waves, was never injured in the slightest degree, although it was of far inferior strength. From the repeated injuries that the pier-head sustained while it was in progress, it was found necessary to connect together the whole of the stones with bolts. The late Mr. James Bremner, of Wick, who had much experience in sea works, recommended that piers should be laid out so as to form a horizontal angle of not more than 25° with the heaviest billows."

DIRECTION OF THE GENERAL COAST-LINE IN RELATION TO THE LINE OF EXPOSURE.

"In 1857 I issued," observes Mr. S., "a series of queries among fishermen and others at various parts of the coast of Scotland, as to the direction from which the heaviest seas come upon the coast. Though there are some apparent

anomalies, the general result derived from the statements of nearly 300 fishermen and others is that, at the distance of $1\frac{1}{2}$ miles seaward of the coast line, the heaviest waves come in the direction of the longest fetch, which goes far to corroborate the supposition that gales frequently act over large extents of water."

"On the shore, however, the force is much modified by the angle formed by the coast with the line of maximum exposure. On the east coast it was found that, at about $1\frac{1}{2}$ miles off shore, the north-east is generally the worst direction; but for that part of the coast which extends from the Tay to Aberdeen, the south-east waves generally break heaviest upon the shore. This arises from the small angle which the north-east bearing makes with the land on this part of the coast. *The most exposed coasts, therefore, may be regarded, cæteris paribus, as those on which the waves generated in the line of maximum exposure come dead in upon the shore.*"

LENGTH OF WAVES.

"The longest distance apart, from crest to crest, of the Atlantic waves observed by Scoresby was 790 ft., and the following were observed, at the Bishop Rock, by Mr. Douglas, on whose authority they are stated:—

8 ft. waves	35 in a mile	171 ft. apart	8 per minute
15 "	5 & 6 in a mile	1200 & 1000 ft. apart	5 "
20 "	3 in a mile	2000 ft. apart	4 "

Mr. Mackintosh, the late light-keeper at the Calf of Man, in the Irish Sea, informs me that he has, on three different occasions, counted $13\frac{1}{2}$ waves between the Calf of Man and the Chickens Rock. The distance gives about 490 ft. as the length of the waves in this comparatively land-locked sea."

FORCE OF THE WAVES.

‘Smeaton, when speaking of the objection that might be raised against the use of joggles in the masonry of the Eddystone Lighthouse, says :—‘When we have to do with, and to endeavour to control, those powers of nature that are subject to no calculation, I trust it will be deemed prudent not to omit in such a case anything that can without difficulty be applied, and that would be likely to add to the security.’ This statement of our greatest marine engineer indicates the propriety of carefully collecting any facts that may help us to a more accurate estimation of those forces which he regarded as being ‘subject to no calculation.’ We shall therefore state a few facts which have been recorded of the destructive power of the waves in inland lakes and in the open ocean.”

“At Port Sonachan, in Loch Awe, where the fetch is under 14 miles of fresh water, a stone weighing a quarter of a ton was torn out of the masonry of the landing slip and overturned.”

“Mr. D. Stevenson, in his ‘Engineering of North America,’ describes the harbours in Lake Erie as reminding him of those on our sea-girt shores, and mentions having seen at the harbour of Buffalo one stone, weighing upwards of half a ton, which had been torn out of its bed, moved several feet, and turned upside down.”

“At the Bishop Rock Lighthouse a bell was broken from its attachments at the level of 100 ft. above the high water-mark during a gale in the winter of 1860 (*Nautical Magazine*, vol. xxi. p. 262); and at Unst a door was broken open at a height of 195 ft. above the sea. To these facts may be added, that I know, from the testimony of an eye-witness, of a block of 50 tons weight being moved by the sea at Barrahead, one of the Hebrides.”

REMARKABLE DESTRUCTIVE EFFECTS AT WHALSEY
SKERRIES.

“At Whalsey, in Zetland, blocks of stone of 6 tons weight have been quarried or broken out of their beds *in situ* on the top of the Bound Skerry, which is elevated 70 ft. above high-water spring-tides, and there is every reason to believe that one mass of 13 tons was in like manner dislodged at a spot which is 74 ft. above the sea. Though there are probably few places where the waves are so violent and dangerous as at Whalsey, still it is well for the reader to be able to recognise the characteristic appearances of similar dangerous localities, and to be put on his guard by a description of the place and the phenomena it presents ; for it must be clearly understood that in such places the ordinary methods of construction cannot be applied. The Bound Skerry is the most eastern of the Shetland group. It consists of quartz rock, forming a part of the gneiss strata, which are here permeated to a considerable extent by ‘dries,’ or seams, and with the exception of a species of lichen that grows on the higher parts, little or no vegetation is to be seen on its surface, although it attains at one point an elevation of 80 ft. above high water, and about 86 ft. above low-water spring-tides. The specific gravity of the rock was found to be 2·698, or about 13·3 cubic ft. to the ton. The calculations of the weights are taken, however, at 14 ft. to the ton, in order to be fully within the mark. There is no approach to uniformity of contour, even at places very near each other, the whole island, indeed, forming one of the most rugged and irregular rocks that can well be imagined.”

It may be well to mention that all outlying islets in these parts are termed “skerries.”

“In 1852, when landing for the first time upon this

skerry, in order to fix upon the best site for a lighthouse, my attention was speedily attracted by some unmistakeable indications of a violent destructive agency which seemed to have been lately at work upon the hard rock of which it consists."

"These were the presence of loose blocks of a very large size, which had been detached from the adjoining strata. The only visible agent was the ocean, the unruffled surface of which appeared far below the place where I stood, not less, indeed, than 70 ft., as the levels afterwards proved. Under circumstances so unlikely, it will not appear strange that I did not readily persuade myself that the sea was indeed the agent of destruction. But, after wandering for an hour or more over the surface of this islet, it was impossible any longer to doubt that the remarkable effects were due to the sea alone. I landed on the Bound Skerry with what I thought tolerably certain and definite conceptions, but I came away with greatly altered views."

"In order to satisfy myself fully as to the matter, I proceeded to the adjoining islands of Gruna and Bruny, where at almost every step similar proofs of violent action presented themselves."

"At Bruny, for instance, the ground was covered with large recently moved blocks, at an elevation of 45 feet above high water."

"To return, however, to the Bound Skerry, it may be stated that a considerable portion of the rock which confronts the south-eastern, round to the north-eastern seas, is in a rapid state of disintegration. On the south-east side, about 370 feet from the low-water mark, and at a height of $62\frac{1}{2}$ feet above its level, there occurs a remarkable beach of angular blocks, varying in size from about $9\frac{1}{4}$ tons downwards, and huddled together just as one would have

expected to find had they been elevated only a few feet above the high-water level."

"This beach of stones was in the vicinity of a detached block of 19½ tons, a little farther seawards."

"Towards the north-east, at the level of 72 feet above the sea, in addition to many smaller blocks, which had evidently been recently detached, there was one 5¼ tons in weight. Within 20 feet of the spot where it lay, there appeared a comparatively recently formed void in the rock, which, upon examination and comparison by measurement, was found to suit exactly the detached block. Here, then, was a phenomenon so remarkable as almost to stagger belief—a mass of 5¼ tons, not only moved at a spot which is 72 feet above high-water spring-tides, but actually quarried from its position *in situ*. But higher up still there was another detached rock, weighing no less than 13¼ tons, tilted up in a peculiar position, and underneath which numerous angular masses had been wedged, obviously by aqueous action. This great block, however, was unlike the one first described, in bearing no traces of recent displacement."

"Though covered with lichen, and apparently long undisturbed, yet there can be no doubt that it too had been separated from the parent cliff, and been tilted up into the position which it now occupies by no other agency than that of the sea, the high-water margin of which is 74 feet below it." Mr. Stevenson gives also other testimony, one in particular of a block of nearly "8 tons driven before the waves at a level of 20 feet above the sea, for a distance of 73 ft., over rugged blocks, and of another block of many tons' weight, pointed out by an inhabitant, moved upwards in a great storm some years back, 15 to 20 on the incline to 50 ft. above sea-level.

Even in the previous winter a huge mass of stone near sea-level was pointed out by an intelligent under officer of the lighthouse, which stone had been wrenched out of its bed, and moved up an incline of 10° or 12° to a distance of 16 feet ; and with this proof," says Mr. Stevenson, "all scepticism vanished."

In his article on Harbours in the 'Encyclopædia Britannica,' 9th edition, 1883, Mr. T. Stevenson records the overthrow of a concrete block of 1350 tons, at Wick, in 1872, and of another block containing 1500 cubic yards of material, overthrown in 1873. Foundations of 18 feet below low water have been washed out, and the bottom excavated 15 feet lower than this by the volume of the sea. This last-named block of concrete was estimated to weigh 2600 tons.

By the erection of dynamometers at Skerryvore, Dunbar, and Buckie, it was ascertained "that a force equivalent to $3\frac{1}{4}$ tons per square foot, *however much more*, was excited by waves under extreme circumstances ; that this force does not act by a sudden finite impact like a cannon-ball, but is continuous during the period that the disc of the dynamometer is immersed in the passing wave. In short, to make the cases analogous, it is like a continuous succession of cannon-balls."

*OF CAUSES WHICH AFFECT THE FORCE OF WAVES,
AND THE FACT THAT THE TIDES IN MANY
CASES ACT AS BREAKWATERS TO THE SHORE.*

At not a few points of many coasts a heavy breaking sea is met with, even in fine weather ; such breakings of the waves are termed by seamen, races, or roosts, or overfalls ; thus we have the Race of Portland, the Race of

Alderney, the Roost of Sumburgh, the term roost being the Orkney and Shetland appellation.

These, according to the currents of tides, last a certain length of time, and are greatly exaggerated, or partially eased, by coinciding or opposing winds. Their position also sometimes varies with the wind, as at Portland, the race being nearer or more distant from the shore as the wind is *off* or *on* the land.

These races become, in fact, breakwaters to the neighbouring shore during the continuance of the current, but as they diminish the rough water being no longer broken, comes quite home on the coast.

At Portland this is particularly evident, and seamen constantly run inside the race, close to the Bill, and thus avoid the race, when they have a commanding breeze, or with a steamer. These disturbances are due to the rapidity of the current running over an uneven bottom, whether it be sand or rock. At Portland, for instance, the bottom, in the form of a ledge, rises suddenly from depths of 12 to 40 fathoms to those of 5 and 10 fathoms, and the currents meeting with this opposition, the water ascends from one side of the obstruction, and, falling down the other, collides with the bottom, and in its recoil therefrom causes the irregular and broken sea in question. This raging of the sea is greatly aggravated by an opposing swell to the course of the current; and at page 53 of his work, Mr. Stevenson says:—"From careful inquiries, as well as from actual personal experience of such dangerous breaking waters as the Bore of Duncansby, and the Merry Men of May in the Pentland Firth, and several others, it appears that the true cause is the *swell of the ocean encountering an opposing tidal current.*"

As to those particular instances the writer cannot speak

from any personal knowledge, but as regards the Race of Portland it exists in the smoothest weather, during the strength of the current, and when there is an entire absence of wind.

That the collision of water with the bottom will cause these great disturbances may be seen in a large fresh-water river, far above the level of the tide, and where no undulation exists, as, for instance, at a weir on a river down the incline of which the water glides with accelerated speed, after passing the ridge or upper edge. At the foot of such a weir the writer has seen a wave of fresh water rise as much as 5 feet, and for a hundred yards beyond the water is greatly disturbed, causing quite a miniature race. This raging of the water is clearly caused by its overfalling in the case of the river, *without any swell*, all disturbance being primarily caused by the weir, answering to the ledge off Portland Bill, and the other uneven ground in the vicinity. When this disturbance occurs on a shoal off the land some distance, it is known as an "overfall" instead of a race, the overfalling of the water and recoil of the force from the bottom resulting also in a tumultuous sea. Until the water is carried by the current over the edge of these banks, it is often in fine weather almost as smooth as a river, and the tumult rises up immediately the edge is past. This action of the water can be daily observed at the mouth of tide rivers on the cbb, and particularly on the flood tide inside the bars, some distance above which the current, in falling into the channel over the steep sides of the banks, causes a similar disturbance on a reduced scale, and may be seen higher up the estuary, also at the steep edges of other banks. Although the swell of the ocean encountering and opposing a tidal current, is a most severe aggravation of the raging of the sea whenever it occurs, it is not the universal cause of such races, because they exist constantly without it.

The diminishing of the power of the waves by their breaking in a race outside may benefit a harbour, and enable the engineer to construct his works at a less cost in dimensions of materials, and in the extent of piers in length and contents.

Mr. Stevenson observes if a harbour work were placed in a rapid tide the masonry would be exposed to the action of a very trying and dangerous high-crested sea, and he gives as an example the harbour of Port Patrick in Wigtonshire, where the violence of the waves is to a great extent due to the rapidity of the tides ; if, on the other hand, the race, or roost, runs in such a direction as to be *entirely outside of the harbour and at some distance off*, it will, while it lasts, have a decided tendency to shelter the works, and to act as a breakwater.

THE TIDES ALWAYS INCREASE THE SURF ON THE SHORE.

Mr. Stevenson says sometimes this is the case, but the writer's experience is decidedly to the effect that the disturbance in strong winds *always* increases with the speed of the current and height of the water, and that, as Mr. S. says, the most damage is done from one to two hours before and after high water. It is easy to understand this, for the incoming tide brings the swell with it, because the various rocks outside, or banks, are gradually becoming more covered, each of which is a small breakwater of itself, and the whole combined have a very decided effect, when uncovered, in smoothening the waves. Mr. S. particularly mentions in another place, that very much less sea breaks on the Skerryvore Lighthouse as the offlying rocks become uncovered. As regarding the effects at or near high water, he mentions "that a large body of water was thrown on the

lantern of Noss Head Lighthouse, February 15, 1853, during a north-east gale. The lantern was 175 ft. above the sea ; time, one hour before high water."

"On November 23, 1824, one hour and a half before high water, a very alarming wave struck the Eddystone Tower, and enveloped the house to a most unusual extent. Five panes of glass were broken in the light room." This must be what is known as the great November gale, when the writer has been informed that 42 vessels were wrecked at Plymouth, and a fearful amount of damage was done to all the towns on the neighbouring coast.

At Lyme Regis, at this time, the water rose 40 ft. perpendicularly ; usual rise of tide about 13 ft.

"At Peterhead, on January 10, 1849, a crowd of people were down about *two hours before high water* helping to secure the whalers and other craft, when three successive waves bursting over the harbour, carried away 315 feet of bulwark, founded $9\frac{1}{2}$ feet above high water springs, which had stood many years. One piece of wall weighing 13 tons was moved 50 feet. After this the waves became more moderate until about *two hours after high water*, by which time the large whalers had taken the ground, when other three enormous waves again swept over the harbour, submerging the quays to the depth of 6 or 7 feet, and occasioning the loss of 16 people."

CHARACTERISTICS OF COASTS, THE EXPOSURE OF WHICH ARE MUCH AFFECTED BY THE TIDES.

From the preceding statements Mr. Stevenson deduces the following conclusions :—

"1. As the waves approach to parallelism with the shore-line their destructive power is increased.

"2. Their power is increased in proportion as the direction

of the main body of the tide approaches to coincidence with the direction of the heaviest swell, and they are probably worst at headlands on which the tide splits.

“3. At parts of the coast where strong tide-currents set off the shore they reduce the waves by acting as a break-water.

“4. Where a considerable part of the coast retires, there will be less sea during the strength of the tide, even though the waves come in parallel to the shore, because the tide keeps outside, following the general direction of the *trend* of the coast. But this will probably not hold good of small re-entrant hollows of the shore.

“5. Although the line of exposure and the tide-current are parallel to the coast, yet if the tide runs in a line very near the shore, as is the case in short narrow channels where the velocity of the current is increased, there may, nevertheless, be a very heavy sea.

“6. The most severely tried shores will be those where the line of maximum exposure is at *right angles* to the line of shore, and where it coincides with the direction of the principal tide-current.”

RELATION BETWEEN HEIGHT OF WAVES AND DEPTH OF WATER.

“Another circumstance affecting the exposure of any marine work is the depth of the sea or ocean on the shores of which it is built.”

“The great rolling billows so commonly met with in the Atlantic Ocean cannot be generated in the shallower parts of the German Ocean, unless, perhaps, in such peculiar circumstances as have just been adverted to.”

“I advise the reader when judging of any locality not to

confine his attention to the *local* depth which exists immediately in front of the harbour, but to bear in mind the *general depth* of the sea or ocean on the shores of which his work is to be placed."

"If, however, the shoal water immediately in front of a harbour extends seawards for a considerable distance, so as to form an extensive flat beach or foreshore, that depth does become the true limit for the maximum wave, whatever may be the general depth of the sea outside. The small depth over the outlying rocks at Arbroath, Mr. Leslie found, had the effect of *tripping* up the heaviest seas, and thus destroying them before they reached the harbour, while it was still sufficient to allow the smaller waves to pass over the shoals and reach the works in an unbroken state. It thus appears that the largest waves are not always so destructive as smaller waves. We may also conclude that in some cases of severe exposure, where it would not interfere with the passage of ships, the waves might to some extent be reduced by dropping very large stones at some distance seaward of the works, so as, by forming an artificial shoal, to cause the waves to crest and break outside. On the other hand, it is quite possible that there may be a very considerable depth at low water close to the pier, arising from the geological formation, or due to the scouring action of a local current, while the general character of the sea outside may be that of a shallow basin, encumbered with reefs or sandbanks which render the formation of heavy billows altogether impossible."

MR. RUSSELL'S LAW OF BREAKING WAVES.

"It is of great importance," says Mr. Stevenson, "to be able in all cases to ascertain the maximum possible wave

that can exist unbroken in any given depth of water. Mr. Scott Russell, whose observations on what may be called the marine branch of hydrodynamics are of such great value, has stated that 'he has never noticed a wave so much as 10 ft. high in 10 ft. water, nor so much as 20 ft. high in 20 ft. water, nor 30 ft. high in 5 fathoms water; but he has seen waves approach very nearly to those limits.'

"It is presumed that the datum here referred to is the mean level of the surface of the sea."

"I have had no opportunities of verifying these observations on high waves; but as the subject is very important, because the depth of water for some distance in front of the work may be said to be the ruling element which determines the amount of force which it has to resist, whatever be the line of exposure, I will simply mention the most satisfactory results that I have as yet obtained on this subject, and which, so far as they go, confirm Mr. Russell's law."

‘OBSERVATIONS ON BREAKING WAVES.

Total height of Wave.		Depth of Water in Hollow of Wave.	
Ft.	In.	Ft.	In.
2	6	1	2
3	0	1	5
3	0	1	5

"It must, however, be borne in mind that these observations, and I conceive also those of Mr. Russell, apply only to those short, steep, and superficial waves which are due to an existing wind, and not to the ground swells which are almost constantly to be found in the open ocean, which may be the result of former gales, or are the telegraph, as they have been called, of those which are yet to come."

*OF THE RADIATIVE MOTION AND FORCE OF WAVES,
AND OF THE MEANS ADOPTED OR SUGGESTED
FOR REDUCTION OF THE SAME IN OPEN OR
CLOSE HARBOURS.*

This is a very difficult portion of the subject, so difficult, indeed, that the writer approaches it with much diffidence ; nevertheless it must not be shunted into a siding, so to speak, for on the careful solution of this problem the success of any work as a harbour must depend.

So much damage has resulted in bad weather to boats and vessels in artificial harbours from the violence of the undulation or run of the sea, that in forming any design for a harbour the reduction of the waves within the sphere of the works should be looked on as the mainspring and regulating principle of the form of the design. The constructive strength in form of pier or piers, both of outline and of face, must of course be kept prominently in view, and it does so happen that the form of pier which promises the greatest tranquillity within the enclosure also promises the greatest strength in construction ; the writer refers to convexity of outline, which relieves the masonry where most exposed, at the points of impact, where circumstances permit of such a form, by dispersing the force of the waves laterally on the outside, and allowing them also to expand in like manner within the enclosed area.

On this subject of the reduction of the waves, Mr. Stevenson says : " I cannot but express regret that no attempt has been made, so far as I am aware, to lead us from mere speculation and guess to the exactness and certainty derivable from calculations based on theoretical or experimental data (page 118). I have been unable

indeed, to find that a single observation or experiment of any kind has been made upon the subject, and yet the whole benefits which are expected to result from the erection of our great national breakwaters *depend entirely upon this reduction of the waves.*" It is scarcely possible to speak more strongly than this, and on account of its very great importance the writer hopes he may be pardoned for again quoting the three striking paragraphs from Mr. Stevenson (pp. 118, 119, and 120) which he has already quoted at page 44 of this essay :—

"When a wave encounters an obstacle such as a breakwater, if we suppose the portion which strikes it to be annihilated by the impact, or to be reflected seawards, the portion which is neither destroyed nor interrupted will spread laterally *behind* the breakwater.

"When the waves are deflected by a pier with a free end, and run along its inner side, the reduction which they suffer will be due to the distance passed over, and to the angle of deviation produced by the pier. Though far from placing full reliance on so slender a stock of facts as I am in possession of, and which were partly the result of observations at sea, and of experiments made in a brewer's cooling tank about four or five inches deep, I may state that an unbroken wave, after being deflected, was found to decrease in height directly as the distance traversed, and as the square root of the angle of deflection."

"In the subjoined table are given the heights observed at the harbour of Latheronwheel. These observations were made at the outer kants of the pier of Latheronwheel, which is *single*, with a free end, and which acts on the waves in a different manner from a harbour which forms an *inclosed* area, to which I shall next refer."

1853. Original height of Wave.	Distance passed over.	Angles.	Observed reduced Heights.
feet.	feet.		feet.
4·5	16	51°	3·0
5·0	„	„	3·5
4·5	„	„	3·0
6·5	„	„	5·0
3·0	„	90°	2·0
3·5	„	„	2·5
4·0	„	„	2·5
5·0	„	„	3·0
4·5	32	140°	2·0
5·0	„	„	2·5
4·5	„	„	2·5
6·5	„	„	3·0

REDUCTION IN THE HEIGHT OF THE WAVES AFTER PASSING INTO CLOSE HARBOURS.

This is the third paragraph again quoted :—

“The ultimate object of every harbour is to preserve the tranquillity of the inclosed area by lowering the height of the waves as they enter, and this property is variously possessed by harbours of different forms, and depends on the relative widths of the entrance and the interior, the depth of water, the form of the entrance, and the relation between the direction of the entrance and that of the line of *maximum exposure*.”

The writer's observations have led him to fix the centres from which the waves expand as near the middle of the entrance ; these he would term the centres of disturbance, and Mr. Stevenson mentions, at p. 121, that Dr. Thomas Young, in his theory of undulation, in the year 1807, also

determined these centres from which the waves expand, and which, he says, "appear to be situated not far from the middle of the entrance."

The writer will now proceed to mention the devices adduced by Mr. Stevenson, as carried out or recommended by several engineers, for the reduction of waves in close harbours, after which he will venture to make some suggestions of his own for the purpose of bringing about the same result.

SIDE CHANNELS FOR REDUCING WAVES.

"At the harbour of West Hartlepool an ingenious and novel device for reducing the height of the waves has been carried out by Mr. R. Ward Jackson and Mr. Casebourne. Interior expansions have been made to communicate with narrow canals, running landwards, and which ultimately join the sea outside the harbour. The portion of the wave which has been detached by spreading into the lateral channels is thus conducted entirely out of the harbour into the open sea."

CELLULAR STRUCTURE FOR REDUCING WAVES.

"There are many situations so narrow and confined as not to admit of the formation of lateral expansions either of the usual kind or of that adopted at Hartlepool; in such situations some reduction may be effected by converting the upper portion of the quay-walls at and near the entrance into a series of chambers, separated from each other by *vertical* diaphragms, so as to smooth the water by forming numerous *stops*. This cellular structure, in some respects similar to what is called in France '*claire voie*,' might be cheaply constructed of vertical partitions of

timber. The action of the cells consists in abstracting from the upper portion of the wave a small part of the water, and retaining it momentarily until the crest has passed the mouth of the cell, when the water so retained is again discharged into the harbour on the *back* of the wave from which it had been abstracted."

"Although the openings were of small width, still, if the entrance passage were of some length, a considerable reduction would be produced by this repeated process of separation and detention. The equalising tendency of the *stops* may to some extent be judged of by noticing the action of vertical fenders on a passing wave."

"On a somewhat similar principle the waves are sometimes reduced by making a portion of the outer piers of *open* timber-work, which allows the wave to burst through it."

STILLING BASIN.

"As before mentioned, it is in some cases essential that there be either a considerable internal area, or else a separate basin opposite the entrance, for the waves to destroy or *spend* themselves. Such a basin should, if possible, inclose a portion of the original shore for the waves to break upon, and when circumstances preclude this, there should be a flat talus of at least 3 or 4 to 1, as recommended by Mr. Bremner of Wick. Mr. Scott Russell has found that talus walls of 1 to 1, or steeper, will not allow the waves to break fully, but will reflect them in such a manner as might in some instances make the entrance difficult or even dangerous of access, and the berthage within unsafe; and I can corroborate this from personal observation. Instances are not wanting of harbours being materially injured by the erection of a

vertical wall across a sloping beach where the waves were formerly allowed to expend their force."

In designing a harbour with an outer or stilling basin, previously referred to in a former illustration amongst others, we follow out the principles of shelter and tranquillity, by which these conditions are obtained in any good natural harbour of land-locked form, as pointed out previously in connection with the harbour of Dartmouth, where the successive points break the force of the undulation, and the bays behind each point allow the radiative forces to expand from the centres of disturbance near each point, until the waves are reduced to rest.

In connection with the subject of recoil or backsend from a sloped talus, recommended as an auxiliary feature of reductive power, the writer would add the following observations made on a very exposed coast, where he resided many years, the beach three miles in extent; and almost entirely consisting of shingle of various size. At the east end of this beach it curves round so much that it faces the prevalent winds, those from west and south-west, and the result is that the beach has acquired along here a very steep profile—so steep indeed is this terraced slope of shingle that the stones rattle down from under your feet at each step.

Inasmuch as the incline of the beach is moderate at low water-mark of spring-tides, and very abrupt at high water-mark, it follows that a favourable opportunity is afforded to a resident who may wish to make observations, as the tide rises, if he should have the opportunity of being at such a place at low-water spring-tides, when a heavy ground-swell sets on to the beach in calm weather, which, as all persons know who have paid attention to the subject, is not unfrequently the case.

The observations of the writer were to this effect, that on a slope of eleven and a quarter degrees, there is no recoil or backsend from the waves, which spend their violence thereon up to a slope of nearly forty-five degrees, but with the approach to the last-named gradient a visible recoil commences, and increases fast between that and seventy degrees, to which extreme steepness the shingle will often run for ten or fifteen feet below high water-mark, when the shingle beach is perpendicular to or directly faces the prevalent wind through the curvature of the shore. When this is the case, a heavy swell breaking against the top of the slope, is reflected back with so much violence that the backsend may be plainly seen to travel as far as four hundred feet, more or less, according to the power of the undulation or ground-swell at the time, in the seaward direction.

These observations on the angles of recoil and expenditure of wave-force manifestly have an important bearing on the subject of the gradient of any artificial beach or talus, and point to the wisdom of preserving a portion of natural sea beach, unless a pressing necessity exists for occupying the same by a quay, in which case it may be necessary to resort to one of the before-mentioned methods.

BOOMS FOR EXCLUDING WAVES.

Harbours of small reductive power are sometimes closed by logs of timber named booms, the ends secured by being lowered into grooves of masonry on each side of the entrance of the basin inside. The lowest log rests on a sill-piece at the bottom of the channel, and the logs being continued to the level of the coping, a barrier or wall

of wood is thus formed to exclude the violence of the waves. An iron hasp or other means are used to keep the logs from rising. They are quite effective as long as they stand, and the longest mentioned by Mr. Stevenson are about 45 feet. At Hartlepool and Seaham they are worked by aid of steam power. At Hynish Harbour, Argyllshire, where logs of 20 feet long and 12 inches square were used between the supports, at a small tide basin, Mr. Stevenson states they were frequently broken by the violence of the waves. Seven were broken within six years at different dates. They were perfectly sound, and would stand a pressure of 30 tons. Although perfectly effectual, these booms are unsuited where there is much traffic, *shipping* and *unshipping* so many logs involving delay which might result in serious consequences.

They are not used except under storm emergencies, but could not be recommended for fishing harbours used by a number of boats, as it would be a most serious matter for one or more boats to arrive and find the entrance closed. Signals, of course, are in use to warn vessels off, but might be perceived too late to enable approaching craft to clear the land. There is one instance of the use of a boom at a harbour in the south of Cornwall, but it is a clay-loading and not a fishing harbour.

Mr. Stevenson suggests for large spaces tubular booms of boiler plate, pervious to water, so that they would sink of their own gravity, and not require to be warped down like logs of wood.

Storm-gates have also been used in these positions, with more or less success, to close the entrance.

SMALL CLOSE HARBOURS MORE DIFFICULT TO DESIGN
THAN LARGER.

“Difficulties of design increase greatly as the extent of the works diminishes. Indeed if the piers inclose a very large area some of the elements of difficulty will nearly altogether disappear. Little attention need then be given to the questions which are so troublesome in small basins, regarding reductive power, want of spend, recoil of waves, and comparatively little as to width of entrance.” With the above last-quoted paragraph, Mr. Stevenson leaves this part of the subject.

*THE APPLICATION OF THE NATURAL PRINCIPLES
OF REDUCTION OF WAVES TO THE PROJECTION
OF ARTIFICIAL HARBOURS.*

At the first glance at the accompanying diagram, the reader may imagine that the circle and semi-circle constitute nothing more than a fanciful conception of the writer, but in a few words he hopes to show that they have a very deep significance, and that the projection of a harbour by the aid of a circle is the true method of performing such a work, and that in fact it is the key of the subject.

All undulation, either from a free pier-head or break-water, or from between two pier-heads, is of a radiative character, and provision for its reduction should be made by the aid of a circle on this account.

Another reason is that no other figure conveys to the mind of man so definite a conception of either proportion or distance.

Radiation of undulation manifestly implies the existence of a centre, which we find commences, as above mentioned,

at pier-heads ; these the writer proposes to term centres of disturbance.

The accompanying diagram sketch (Fig. 2) represents a compound harbour in an exposed position, although possessed of some amount of protection from certain points. It consists of an inside harbour, an outer or stilling basin, and a kanted pier or breakwater, extending beyond as the most seaward portion of the work.

There are here three centres of disturbance, the first at the kanted breakwater head, the second between the piers of the outer or stilling basin, the third at the entrance of the inner harbour.

For the sake of example we will suppose the harbour to look towards the north, and E the point of *maximum* exposure. The harbour is situated in a bay, the shore rocky, but running first west, then north, and latterly east ; the bottom sand at the position of the harbour, a stratum of clay beneath, overlying rock.

From the point of *maximum* exposure, the drift 200 miles, from the northward across the bay length of drift five miles, in the direction of the kanted head of the breakwater greatest drift four miles, in a westerly direction greatest drift three miles. To use the words of Mr. T. Stevenson, a wave from the point of maximum exposure from the east strikes the breakwater at A, and a portion is reflected seawards ; the portion not so reflected passes onwards, and a part spreads behind the breakwater, which has a free end, running along the inner side, and much diminished in height as it approaches the end of the kanted pier, near the entrance of the stilling or outer basin. A portion of the force of the wave from the pier-head, radiating in its progress, accompanies the first-named wave and joins it in diminishing strength at B, between the piers

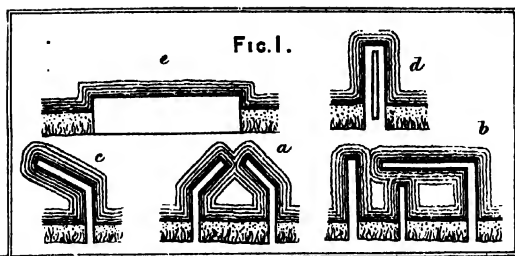
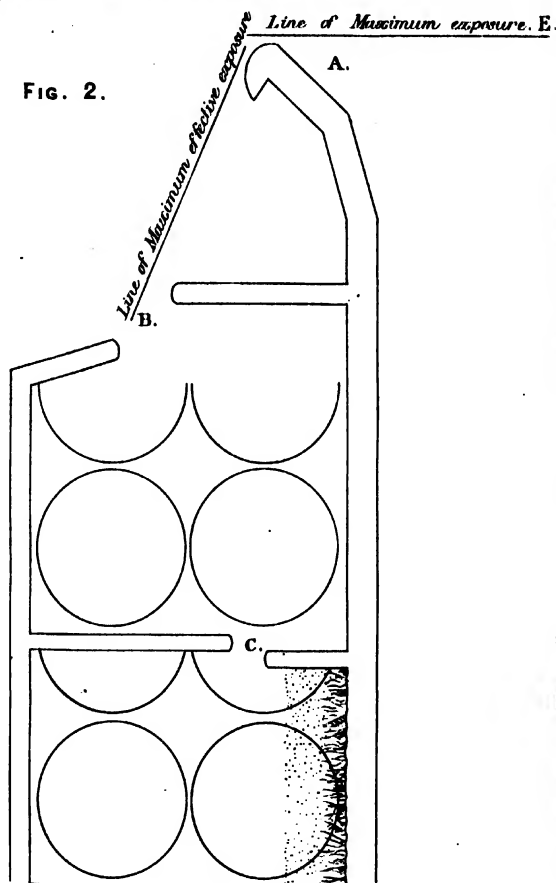


FIG. 2.



of the outer basin, where having arrived at the second centre of disturbance, it spreads laterally along the insides of the quays.

The undulative force is, however, not nearly yet subdued, and takes from the point B another departure, although with diminished strength. But the conditions are now altered, for the waves have entered a close harbour, that is to say, the undulation meets with opposition from walls on both sides as it expands to the limits of the enclosure on either side. A certain amount of hindrance to the reduction of wave-height is of course unavoidable ; but as the distance from the entrance increases, so does the force of the radiation diminish, so that on approaching the point C at the entrance of the inner harbour, the run is very much lessened.

At this point C we have the third centre of disturbance, whence the undulation spreads as before in several directions, but is now disarmed of its violence, so that boats or vessels in the most violent weather can remain in safety moored to the quays.

PROPORTIONS OF THE DESIGN.

As regards the proportions of this form, both the inner and outer divisions of the harbour are of nearly equal dimensions, and it will be at once observed that, measured by circles, each basin contains two in the direction of the base line, and one circle and a half on the line of the perpendicular. The writer, where circumstances permit, would by no means object to the addition of half a circle of additional lateral space to the enclosed areas, as in Fig. 3, facing p. 82, but there are a large number of localities where this could not be done ; and he, on this account, thinks that these proportions will often be found suitable.

The reader will not fail to observe that the entrances of the outer and inner harbours are placed not in a right line, but in a diagonal line in respect of each other, the object of which arrangement is to prevent the maximum of effective undulation from the point B entering the inner basin on a right line.

The distance from the point to the inner entrance at C is greater than if the undulation met the wall at a right line, which is of itself a certain gain; but the most important feature is, that in addition to the fact of these second piers giving successive shelter, the diagonal position of the eastern head will divide the undulation and cause it to diverge laterally at its back.

The *diagonal position* of inner and outer entrances with regard to each other, if recognised and applied wherever practicable, would be found a most powerful factor, the writer would submit, in the reduction of the height of the waves in a close harbour.

TALUS OR SPENDING BEACH.

If this does not exist naturally on the shore on which the harbour is being constructed, and the inner base line be required for quays, which is very generally the case, such a beach might be provided on the right hand margin of the inner harbour (Fig. 2, facing p. 80), or left (Fig. 3, facing this page), on which the remainder of the undulation, after passing the inner pair of piers, might expend itself.

Such a talus or incline is very useful, as a vessel could be run on it and stopped without damage, to say nothing of its availability for craft of all kinds to clean and coat the bottoms, repair, or caulk, when required.

We are accustomed to speak of our fishing craft as boats, but as so large a number of them have now become

Line of Maximum exposure.

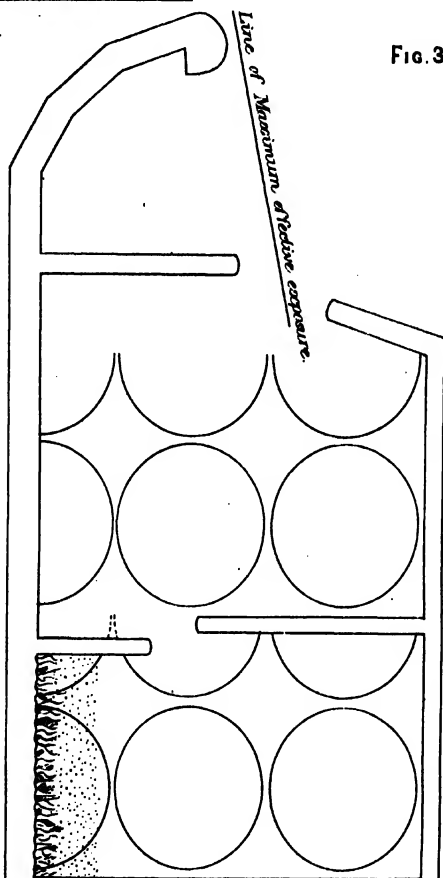


FIG. 3.

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decked-vessels—not to mention our trawling and cod-smacks—it is quite clear that special arrangements are required for their accommodation. In outside basins the construction of a talus is a very doubtful advantage, for although it may undoubtedly assist in the reduction of the undulation, it may itself constitute an element of danger in bad weather if a vessel should drive upon it, for in outer harbours it is extremely difficult to keep any small substances in position as a coating.

The violent action of the water holds the sand in suspension, and deposits also the small shingle therewith at the foot of the incline as the tide ebbs. On open beaches especially, such as are frequently receiving accessions of material from neighbouring cliffs, composed of strata of sandstone of a friable character, and gravel, the action of the water may be observed with much profit to the engineer in reference to artificial beaches in harbours, commonly known as hards, careening, or beaching places.

On a beach constantly receiving accessions, as above mentioned, the writer has observed that in the most exposed positions the sand will not remain upon the slope, but is removed or sifted out from the shingle by the action of the waves ; and the boundary just below the line of low water is so marked at some localities of great exposure, that the appearance is as if the whole of the shingle had been thrown on the upper side of a line by the hands of man.

Mr. Stevenson observes that a talus should be rough to be efficient in reducing the height of the waves in a close harbour, and that if smooth it is deprived of much of its reductive power ; if however it be so placed in an outer harbour that vessels are liable to be driven on it (and it would be difficult to find a position where no such

liability exists), such vessels or boats would be much damaged on their keels and bilges, possibly even wrecked in port, through the existence of a rough artificial beach.

If a vessel or large boat parts from her fastening, or drags her anchors in an outer harbour, she is likely to receive less damage against a vertical or nearly vertical wall than on a rough slope, for as soon as she falls broad-side on, the recoil from the wall will partially diminish the force of the shock, and her damages will probably be confined to her upper works, or as sailors term it her "topsides." The crew also may find opportunity of lowering fenders between the vessel and the wall, and prevent a good deal of damage until assistance arrives ; but on a slope of large rubble stone she will probably remain grinding until entirely aground.

POSITION OF THE OUTER ENTRANCE.

The position of the outer entrance, it will be observed, is about three-fourths of the breadth of the harbour to leeward; this position is chosen to give as much sheltered space as possible to the outer harbour, and although a vessel or boat, which has made good her entrance through the outer piers, if the wind be blowing diagonally off the land from the south eastward could not fetch through the inner pair of piers, there will manifestly be no sea to contend with, and this being the case she can stand on towards the western quay, and work up either for the weather quay or the inner harbour. All winds, from south-east round southerly to south-west, being off shore, we have not to provide against them, whilst all other winds round southerly will lead boats or vessels in freely, past each pier-head in succession.

OVERLAPPING POSITIONS OF PIER-HEADS.

This, from a nautical point of view, is a great convenience and advantage, as it allows boats or vessels much facility of ingress and egress in foul winds. A boat or vessel can take her departure from the lee of a pier-head overlapping its fellow to a certain extent, as shown in the diagrams, and weather the lee pier-head without difficulty in working out of the harbour, and when working into the harbour, can then stand along the outer face wall of the inner of the two, and fetch inside, according to her position. The writer has seen so much difficulty and damage result from the position of the piers *vis-à-vis* that, wherever the exposure is not too great, he would confidently recommend one pier to be placed in advance of the other.

PIERS *En Avance* AND PIERS *Vis-à-Vis*.

Piers *en avance*, or overlapping, are found excellent in bays, or where islands exist as natural breakwaters to a long fetch, in fact wherever there is a certain amount of natural protection. In such positions these covering piers receive the impact of the waves from the point of greatest exposure, and shoot off the chief portion of their violence towards the shore of the bay, or free space to leeward.

The question, however, naturally arises in what length of drift or fetch a covering-pier, i.e., *en avance*, ceases to be useful, beyond which it may be positively prejudicial, owing to the amount of undulation it will throw into the interior of the harbour, during a gale of wind blowing on its inside face.

From observations made by the writer, he concludes that about two-and-a-half miles is the longest fetch to be allowed in most cases, where such drift would fall on

the inside face of the pier *en avance* ; and this should only be allowed where an inner harbour exists in which shelter may be taken.

Where, no inner harbour exists, the pier should be brought round sufficiently to shorten the fetch to one mile, when it can be so arranged without rendering the harbour difficult of access or placing the pier-head in too shallow water. Mr. Stevenson gives special caution on the following matters.

CAUSES OF INCREASE OF WAVES IN CLOSE HARBOURS.

1. Removal of the spending-beach at entrance channel, or within the harbour, by building a quay or talus wall across.

2. The deepening of the entrance channel into the harbour rendering it especially difficult to hold vessels on the flowing tide.

3. The removal of an artificial breakwater, or protecting point of land, or spit of gravel, or rock.

4. Filling up side creeks or basins in a harbour or entrance channel.

5. Shortening the distance between the sea and entrance to an inner harbour or dock, or by projecting a basin or dock farther out from the shore line, so as to bring the gates nearer the sea-entrance, or projecting the mouth of a harbour farther seawards.

6. Removal of a jetty, or filling up an artificial chamber, or converting talus into plumb walls.

7. Straightening an entrance channel, or an outer outside breakwater, or walls within the harbour.

8. Widening the entrance or channel.

9. Reduction of area of the harbour basin.

10. Making smoother the surface of a natural sloping beach within an outside harbour by pitching the surface.

11. Lowering the top of the protecting outside break-water.

12. Converting an open staging into a close quay.

13. Lengthening a breakwater, so as to intercept a greater portion of the waves from certain directions.

These last notes are from the article on Harbours, by Mr. T. Stevenson, in the 9th edition of the 'Encyclopædia Britannica,' at present (1883) in progress of publication.

CAPACITY OF OPEN HARBOURS.

Mr. Stevenson says, that "For open harbours it is not easy to give even a good approximation. Lieut. Calver takes it at three vessels per acre for a well-sheltered harbour of refuge."

RAMSGATE, A TIDAL HARBOUR.

Capacity for outer harbour, 6 vessels to the acre.

Capacity for inner harbour, 14 vessels to the acre.

CAPACITY OF FISHING HARBOURS.

In the Scotch fishing harbours the number of boats varied from 85 to 115 per acre of basin, but in consequence of the increase of size of boats from 80 to 90. At Newlyn, in Cornwall, from 60 to 80.

OF MATERIALS, MASONRY, ETC.

TIMBER.

The use of timber in piers and harbour works is of remote antiquity, and were it not for its perishable character it would be superior to all other material for these purposes.

The weak point of masonry is that it lacks continuity, whereas timber possesses this in an eminent degree.

Timber is very largely used now in construction, as well as an adjunct, in many forms and features of harbour work ; and in the form of piling, either with stone within and surrounding the piles, or without, or in boxes filled with stone, is often met with at the present day. The Romans frequently used this latter method. Mr. Stevenson not only mentions this, but gives a long extract from a contract in Latin, between the Abbots of Arbroath and the Burgesses, dating 450 years since, mentioning the stone-filled timber chest method in the construction of harbour works.

DESTRUCTION OF TIMBER BY WORMS.

The writer has adverted already to this subject, but some further observations may not possibly be thought out of place here. The three great mischief-makers are the *Teredo navalis*, the *Limnoria terebrans*, and the *Chelura terebrans*. The *Teredo* burrows internally, the *Limnoria* plough away on the exterior, in some places at the rate of an inch inwards per annum ; and between the three timber has a very short duration, becoming burrowed and honeycombed to that degree, that it actually falls to pieces.

The writer has known three flights of wooden steps eaten in nine years, and jetties requiring rebuilding. It was formerly thought that the damage between low and high-water marks was not considerable, but extended experience has proved that the worms work at all heights between high and low water, and under low-water level until the pile enters the sand. Mr. R. Stevenson's experi-

ments show greenheart to be more durable than any other wood, remaining sound for 19 years, teak for 13, also beefwood.

The various timbers of the pine and fir tribes of trees show the commencement of the mischief by the *Limnoria terebrans*, some at 13, others at 18 months, after exposure. The saltier the water, the more vigorous are the worms in their attacks. Fresh water coming down an estuary from a river may check, but does not prevent their ravages. The writer has even seen greenheart destroyed, and it is merely a question of time. Greenheart being comparatively durable, as regards other kinds of timber, would always be used but for its great cost.

PROTECTION OF TIMBER.

Mr. Stevenson suggests that Memel logs for inside piles might be sheathed over with greenheart, as from their position they would not be chafed by vessels. Copper sheathing and scupper nailing has often been found for a long time effective. The nails are driven in closely together and rust into a compact surface, and the oxide enters into the outer skin, which for a time defies the worms. Any small aperture, however, will admit the enemy.

The process of creosoting was confidently believed to be effective against the worm, but every engineer now knows it is not so, and that they will attack timber treated with creosote, even black in colour, and smelling strongly of the solution.

Mr. Thomas Stevenson particularly mentions that Mr. D. Stevenson draws attention to the fact, that great destruction happened to thoroughly creosoted timber at

Scrabster, Leith, and Invergordon; and the writer has observed the same destruction go on in localities at both sides of the English Channel—on the English side where a powerful freshwater river forms its estuary, and on the French side, where no brook entered the harbour. At the latter locality the destruction, as might have been expected, was much more rapid than at the former.

ADVANTAGES OF TIMBER AS A MATERIAL.

On this subject Mr. Stevenson speaks very strongly. "It is much to be regretted," he says, "that greenheart is so expensive in this country, and that some simple and economical specific against the worm has not been discovered for protecting Memel and the cheaper kinds of pine. The grand desideratum in harbour works, which is the *want of continuity in the structure*, would then be supplied. It follows from the known laws of fluids, that each individual stone in a pier, which is equally exposed throughout its whole length, is subjected to a force which it can only resist by its own inertia and the friction due to its contact with the adjoining stones. The stability of a whole hydraulic work may therefore be imperilled by the use of small stones in one part of the fabric, while it may be in no way increased by the introduction of heavier stones into other parts. By the use of long logs of timber, carefully bolted together, a new element of strength is obviously obtained. A pier could be erected almost free of sea risk if constructed of rectangular or other shaped prisms, consisting of logs of timber treenailed and bolted together so as to form boxes, say 10 feet square, and 30 or 40 feet long. The interior of the boxes would be filled with rubble or *beton*." Mr. Stevenson, at p. 152, gives the following :—

Beton.—Of late years Mr. Walker has introduced from France the use of *beton* as a substitute for backing. This artificial concrete is sometimes used in enormous blocks. I have seen Cherbourg blocks of 50 tons prepared in boxes, whose sides and tops are removed after the concrete has set, in order to be again similarly employed. The proportions used at Cherbourg by M. Rebeille were two of sand or fine gravel to one of Portland cement; and the blocks thus prepared began to set in about two hours, were as hard as Roman cement in 24 hours, and in the course of a few months became nearly as hard as stone.

The first layer would be arranged across the pier, so as the better to fit the irregularities of the bottom, and above that they might be arranged lengthways of the pier, so as to form its outer and inner walls, the space between being filled with common rubble or *beton*.

DESTRUCTION OF STONE.

The *Pholas* bores through wood, blue lias and marble limestone, hard and soft shales, sandstone, clay, and is much found in peat deposits.

The *saxicavæ* make the limestone blocks holed like a honeycomb; pieces break off, and the creatures commence work again on a new surface.

Mr. Stevenson quotes Professors Forbes and Hanley regarding this ('Hist. Brit. Mollusca,' vol. i. p. 104).

OF IRON. ITS DURABILITY.

Promenade-piers are more often built of iron piles than other materials, but not being calculated to afford shelter the writer will not go into this material to any great extent.

As an adjunct in the shape of ladders and ringbolts, and chains, or as stiffeners to a wooden pier, this material will probably always remain in use. Twenty-five experiments at the Bell Rock, in different kinds and combinations, when ungalvanised, oxidised with much the same readiness. The zinc stood 3 or 4 years, after which the iron thus coated oxidised, as the ungalvanised iron. Castings one inch square perished at the rate of one inch to the century. An apparently sound bar was reduced in strength from 4068 lbs. to 2352 lbs., having lost nearly half its strength in about fifty years.

Mr. Stevenson, after adducing a number of instances of the perishable nature of iron, sums up as follows—

Where there is room for choice, neither cast nor malleable iron should be used as a principal constituent of sea-works, which are to be so deeply submerged as to become difficult of inspection and repair.

When we find that even thick pieces of cast iron, and those not constantly immersed, decay so rapidly, what can be expected of the durability of malleable iron bolts and tie-bars which do not exceed an inch or two in diameter? And what reliance can be placed on the stability of deeply submerged marine structures, the unity of which depends upon such perishable bonds?

OF THE DRESSING AND METHOD OF ASSEMBLING MASONRY IN SEA WORKS.

“The requirements for marine masonry are, in many respects, nearly the opposite for land architecture. What is wanted in sea-work of the ordinary kind, which neither consists of framed carpentry, nor has been rendered monolithic by cement, is that each stone shall gravitate

freely, and transmit its pressure unimpaired to those below it."

"If, therefore, a pier could be so constructed that on the abstraction of a stone at the bottom the whole vertical section of masonry resting upon it should at once sink, so as to fill up the void, the perfection of marine masonry would be attained, because the lower courses would then bear the unreduced weight of the upper, and would therefore be the less easily abstracted. The difficulty of pulling out any stone would then be proportional to its distance from the top of the wall."

"In land architecture the whole structure is greatly strengthened by the occasional insertion of long stones, but in the sea, where each stone is assailed *per se*, the stability of any horizontal course, if equally exposed throughout, is measured by the stability of the *smallest* stone in that course, and therefore, the more uniform the size of the materials in each horizontal section of the work, the better. It is of some moment that this should be properly understood, and that it should be recollected, that *a pier equally exposed throughout its whole length is no stronger than its weakest point wherever that may be.*"

"We must beware then of importing into marine engineering, as is too generally done, the laws and maxims of house architecture with its vertical bond and its small but carefully dressed face-stones. It matters not, indeed, how rough the masonry of the *face-work* of a sea-wall be, provided there are no protuberances large enough to offer material resistance to the jet of water in front of the wall; and we have already pointed out the valuable effects of keeping the beds rough. All the blocks should, however, *bed and joint* fairly on each other, and no face pinnings or small *closers* should on any account be allowed in the outer

face-work. It is also of vital consequence that the backing should not be slurred over by being loosely assembled, but should on the contrary be carefully set, and regularly bonded with the face-work as the building proceeds. The *outside* of the *parapet*, though of smaller dimensions, should be similar in quality to the sea-wall, while its inside, from not being exposed to the wash of the sea, may be built of good heavy rubble."

"From the risk of damage already referred to, it comes to be a difficult question to decide whether the *roadway pitching* should be built with open joints, or be made altogether impervious to water." Mr. T. S. Hunter mentions the following instance of damage to the pitching at Granton :— "A portion of the pitching, which had just been grouted previous to the storm, was completely doubled up like a sheet of paper, but after the grouting was removed, and the same stones set dry, they were never again disturbed." "The safe course is probably not to attempt the formation of an altogether impervious surface where the sea-wall is built of dry masonry." The doubling-up of this pitching at Granton was doubtless owing to condensation of air, through the pressure of the sea water which had entered through the dry stone masonry of the sea-wall. It is well known that hydraulic pressure may be so intensified that no known material may withstand it.

Such an occurrence as the above would be termed by labourers and mechanics, "a blow up."

"The *quay-wall* requires no particular notice. The upper portions are sometimes set in mortar, but the rest is set dry." This is not universal; a very extensive and important work, with which the writer is acquainted, has the whole of the quay-wall carefully pointed with cement. "The *rubble-hearting* should be free of earthy or clayey

matter, or rock of a quality likely to crumble on exposure. Very large boulders should not be admitted, unless after being broken up. In no case, unless the pier be of great width, should the stones be tipped in, without being afterwards assembled with the hand. *The rubble of breakwaters* is generally of a much larger size than for ordinary commercial piers. The *ratio of voids* in a cubic yard of rubble, after being deposited, depends of course on the kind of materials, and varies from about 4 to about 7 cubic feet in each yard."

EDGE WORK IN PIER OR QUAY BUILDING.

On this method Mr. T. Stevenson quotes the views of the late Mr. Bremner of Wick, as follows:—

"If the walls are constructed on a (horizontal) angle of 25° to the sea, and the materials built on edge with 3 inches of slope to the foot perpendicular, they cannot retain any air; and the sea, running along a small portion of the building at one time, actually assists in forcing together the edge building." Mr. Stevenson speaks very highly of this method, and particularly refers to it at St. Andrews and Prestonpans, as evincing greatly superior strength in these ancient works. He condemns the assemblage of stones together in any other way, in exposed positions, but he adds, "care must be taken, however, not to adopt this plan where there is any risk of heavy seas coming in a wrong direction, so as to strike the masonry on the overhanging side."

Treenailing.—"This is a method of securing each stone to its neighbour by iron bolts or wooden pins let into the lying beds or into both beds and joints. At the Eddystone and Bell Rock lighthouses the stones were not only secured

by oaken treenails, but were also cut so as to dovetail into each other, and thus to render the mass practically monolithic. They were also further secured by vertical wedges." Such expensive methods are manifestly only warrantable in peculiar works, where any uprooting of a portion might indefinitely prolong the undertaking.

CONCRETE OR BETON.

This material has quite revolutionised harbour building, and is coming into increased use yearly. Its use has already been adverted to, but it is so fast taking the place of stone that some further space must be devoted to it.

Mr. Stevenson mentions it as having been introduced by Mr. Walker from France as a substitute for backing. Cast in huge blocks, in boxes with moveable sides and tops, it is of almost ubiquitous use in harbour-wall foundations ; in France, and at the entrance of the Suez Canal, and elsewhere, they have been placed in the water without more special arrangement than *pierres perdues*, and allowed to take their own positions on the line of work. Huge artificial monoliths are constructed thus, and, by plank arrangements, continuous building has been successfully carried out.

Mr. Stevenson particularly mentions works carried out by Mr. Balmer, Port Gordon, by putting a saw-draft in each plank, and placing thin plates of iron between them, thus forming a continuous mould for the concrete.

This method finds increasing favour, and on account of the facility of manipulation it will probably always continue so to do.

The quarrying of huge stones is thus avoided, and the splinters or spawls are worked up with the greatest

advantage ; all squaring and facing of stone is also by this means dispensed with, and the required form obtained by moulding the materials, the cement and sand forming the enveloping medium.

PORTLAND CEMENT.

In Mr. Stevenson's article on Harbours in the 'Encyclopædia Britannica,' 9th edition, we have the following important particulars on this subject.

It must weigh 115 lbs. to the bushel, and be ground extremely fine, and must stand the following test.

It is to be made into small blocks, 1 inch square, 8 inches long, and after having been placed in water for 7 days, is to be put on two supports 6 inches apart, and must stand a 70-lb. strain.

Slabs or cakes are also to be made, and after being in water for 24 hours, no cracks or softness must be visible on the surface.

The cement must be taken from four different bags, must be tested weekly, and the results sent to the engineer.

It must be brought direct from the manufactory, and kept dry in a store or chamber with both a wooden floor and side walls.

THE CONCRETE

is to consist of 1 part Portland cement, 2 of sand, and 5 of gravel, thoroughly mixed with pure water. Large angular stones are to be added after deposit, care being taken that all the stones are completely surrounded by concrete 4 inches thick. All the stones must be perfectly clean, and free of sea-weed.

No concrete must be made during frost.

It is thoroughly to be mixed in a machine, and Mr. Massent's is mentioned as performing twelve revolutions.

IRON CONCRETE.

At Stranraer Pier, constructed of timber, Mr. Leslie introduced a concrete consisting of gravel and iron borings. Mr. John Howkins, junr., resident engineer, states "the quantity of iron borings mixed with the hearting was 160 tons, and taking the weight of the gravel at 20 cubic feet to the ton, the proportion of borings to gravel in weight is 1 ton of the former to 17 of the latter, and the proportion in bulk, 1 to 34, assuming 10 cubic feet of iron borings to weigh one ton (which, however, I have not the means of ascertaining at present).

"In digging down at the end of the pier, where the gravel and borings have been acted upon by the sea for two and a half months only, I found the layers of borings caked in a hard mass, and particles of gravel and sand adhering to the sides of the layers; showing that the concretionary influence of the borings is extending, and will, in all probability, in course of time completely bind the intervening layers of gravel."

ASPHALTIC MASONRY AND CONCRETE.

"I have lately tried," says Mr. Stevenson, "at the island of Inchkeith some experimental masonry cemented together with British asphalte. At the same time, the experiment was successfully tried of letting down under the surface of low water, stones and hot asphalte placed in canvas bags, which were pressed down upon the irregular

rocky bottom, so as to equalise it and render its surface ready for founding on."

"If this substitute for mortar and cement in rubble and ashlar work be found capable of resisting the chemical action of sea-water, it bids fair to become of very great value in sea-works." Mr. T. Stevenson's work having been published as long since as 1864, further experience doubtless enables him to speak decidedly on this material.

MR. BREMNER'S PONTOONS.

The proposal to construct in some adjoining place of shelter, enormous *pontoons* of timber, for putting in the foundation of low-water piers, the writer imagines must have occurred to engineers in more than one instance.

It has occurred to the writer of this in the case of a proposed harbour many years since, where the bottom was smooth and regular, and consequently fit to receive such a pontoon.

The under parts of the work are to be built in these pontoons, which are to be towed by steam-tug from the most convenient harbour in the vicinity for the construction of such pontoons, to the desired spot, where they are to be carefully grounded. Piles would have to be securely driven to guide the pontoon into the required position, and heavy anchors also laid down on each side of the site, to assist in gaining it, and holding on the pontoon until it has grounded as required. By valves arranged in the sides and bottom, the water could be admitted so that the pontoon could not again float.

The whole of the foundation could be built of continuous concrete by this method, and the superstructure could be

added after the pontoon and foundation had firmly bedded themselves.

The advantage of putting in a foundation in this manner would be very great, as the whole being continuous, would probably escape that piecemeal overthrow which has happened to so many sea-works, both in construction and after completion.

In the upper facing of such foundations, embrasure-like notches or troughs might be left, into which the superstructure of concrete would mould itself, which would give the whole additional stability.

Such a plan, Mr. Stevenson observes, merits notice and might perhaps be found economical and suitable in some situations, but the great difficulty is to fit the bottom of the pontoon to the irregularities of the ground on which it is to rest, and it is possible this has prevented the execution of this method.

Mr. Stevenson does not mention any other engineer as having suggested this method of putting in low-water foundations, except Mr. Bremner, of Wick, deceased; but the writer cannot but think it has suggested itself to others in the profession.

MR. RENDEL'S METHOD OF DEPOSITING PIERRES PERDUES.

The gantry and waggon method of working with tumblestone is thus referred to by Mr. Stevenson:—The late Mr. Rendel introduced an improved and valuable method of depositing the *pierres perdues* or rubble used in the construction of large breakwaters; this method he first employed at Millbay Pier, Plymouth, in 1838, in a depth of 38 feet, and afterwards on a still larger scale, in the

construction of the breakwaters at Holyhead and Portland. The improvement consists in depositing the rough materials from stagings of timber, elevated a considerable height above high water. The stones are brought on the staging in waggons, through the bottoms of which they are discharged into the sea. The principle on which these stagings are designed, is that of offering the smallest possible resistance to the sea, the under structure consisting of nothing else than single upright piles for supporting each roadway.

The great success which has attended this method is well known, but for the majority of fishing-boat harbours, this method requires too much material; for large refuge harbours however, which may be a development of fishing harbours already existing, it is quite possible this method may be again employed, as at Portland and Holyhead.

Two great points to recommend this mode are—first, the rapidity of construction, and secondly, the opportunity of employing a large amount of unskilled labour; thirdly, refuse stone may be used, as in the case of Portland, where the cap stone, covering the beds of good Portland stone, was used, and cost only the labour of removal. As is well known, the labour was that of convicts, under qualified leading men.

MISCELLANEOUS SUBJECTS IN CONNECTION WITH HARBOURS.

DEPOSIT OF SILT, SAND, &C.

Decrease in depth has been caused in some harbours by deposit of mud, sand, or gravel. This is a great evil, and very difficult to cure.

Where there is too much mud, excavation and hand or steam dredging are employed in the removal.

In respect of mud, very effective work is constantly performed, but both sand and gravel are very difficult to deal with ; in fact, the former would almost seem to have the power of propagating itself, for it is noticed that in many harbours naturally existing, there are banks quite moderate in size from which barges have removed the sand for agricultural and other purposes, from time immemorial, which banks suffer no perceptible decrease. In the case of small banks where this is the case, it is clear an annual deposit must be made.

In the present state of our knowledge it would be little less than *quackery*, observes Mr. Stevenson, to lay down rules for the guidance of the engineer.

MOVEMENT OF SHINGLE.

There is a large accumulation of shingle on many parts of our coast, which may in many cases be traced to the neighbouring cliffs, in which very extensive beds of gravel, &c., often exist. Wherever the prevalent winds blow obliquely on the shore, the waves cause the beach to travel more or less along it, and on the south coast of England they partly obstruct the entrances of harbours.

Where such accumulations take place, it is desirable to place the entrances of harbours in as windward a position as possible, and on the south coast of England to point the entrance to the south-east, and to keep the beach back with piers. In addition to a pair of piers between which the river runs into the sea, a jetty has sometimes been erected west of the west pier to catch the travelling shingle.

SHOALING OF NATURAL BAYS.

It is not a matter of course, that when a space of water is enclosed with solid piers, a great deposit should follow although such is undeniably sometimes the case.

"The shoaling of channels," says Mr. Stevenson, "which have been dredged deeper than the original bottom, forms no proper ground for predicting a similar reduction of depth due to the natural *profile of conservancy* of the shore, which generally preserves its symmetry with remarkable persistency, even within artificial enclosing walls."

CAUSE OF ENCLOSED HARBOURS KEEPING OPEN.

"Mr. Calver, who is strongly opposed to close harbours, on the ground that they will fill up, makes an exception regarding small tidal harbours, which he says are kept clear by the 'scavenging process' of high winds during ebbing tide, and that the most 'diminutive lipper' is effective in moving the lighter kinds of deposit. The surface-ripple described by Mr. Calver will no doubt have a certain effect." Mr. Stevenson considers there must be some more efficient cause to keep ports and harbours open, and attributes it to the run, for wherever there is a ground-swell or run, ordinary waves produced by a gale are sufficient agents, he thinks, to perform this office.

In gales the undulations, as he observes, "become waves of translation, and as each wave as it enters the basin brings a certain amount of water into it, it ultimately must escape seawards, or the water would stand at a higher level in the harbour than the sea outside. The under-surface current thus produced runs probably very near the bottom.

Hence detritus and silt that would be left in the basin, were there no such current, are carried out again into the open sea."

During a gale of wind the writer particularly observed a strong surging current setting out past a harbour entrance in a bay, with apparently as strong a stream as out of a river harbour.

"That the quantity of water so brought in cannot be very small may be judged from the fact that, during a gale in the Irish Sea in 1842, there were counted 9·6 waves per minute, so that about 14,000 waves broke on the shore during 24 hours. Although each wave injected but a small portion of its contents into a harbour, it is quite conceivable that water, returning seaward, should prove efficient as a scouring power, or at least in preventing the entrance of silt near the bottom." It has been recommended in some cases that an opening should be left in addition to the entrance, and such an entrance was left at St. Ives in Cornwall by Smeaton at the harbour. This has since been closed, and an accumulation of much sand having taken place, it has been proposed to re-open it.

EFFICIENCY OF BACK WATER SCOURING.

On this subject Mr. T. Stevenson observes: "The profession may be said to be divided into two great classes—one indeed placing a very high estimate on the efficacy of *back water* in preserving the depth of our tidal harbours; the other on the due regulation of the currents. The one preserves, with the utmost jealousy, every sidelake or bay as being the recipients of what they regard as the grand *vis viva* of navigations; and the other are willing to convert indentations, as well as even the wider parts of the estuary, into solid land, by the

foundation of straight embankments diverging slightly towards the ocean.

"The low-water sectional areas of many estuaries and of creeks increase directly as the quantities of tidal water which lie landwards of each section-line."

The great desideratum required, before any correct theory can be formed upon this subject, is the means of discovering the scouring power of a given quantity of water. The daily varying amount of tidal water which is propelled into an estuary from the ocean, the ever-changing amount of the land waters, which is sometimes extremely small and at others enormously increased in volume, and the extreme diversity of materials forming the bed which, at different parts of the bed of the same river, consist of gravel, sand, or clay, exhibiting endless variety in the sizes and coherence of the particles—present an almost hopeless perplexity for the mind to grapple with. To such causes we may attribute the conflicting opinions which are daily hazarded, and no one of which admits of being proved or disproved. From a comparison made several years ago of different low-water sections of the estuaries of various rivers, and also of bays and creeks in a state of nature, "I found," says Mr. Stevenson, *"that the low-water sectional areas increased directly as the quantities of tide-water that lay landwards of each section-line."* "By thus comparing the sectional area at any point with the area at a point farther down the estuary, we free the question of the difficulty of dealing with the unknown action of the freshes which is nearly the same at both places, as well as of the ever-varying amount of the tides, which is also very nearly equal at both."

"The difference of area will probably in all ordinary channels depend on the quantity of tidal water contained between the two places where the sections are taken. We

should therefore find a progressive increase in the *low-water* sectional area, proportional to the amount of tidal water, as we approach the sea, because the tidal capacity of the river is always increasing, while the land freshes in most rivers remain nearly the same."

"The importance of preserving intact the capacity of the upper portions of rivers ought never to be a matter of any doubt, for although it be perfectly true that contraction benefits the navigation at the place where it exists, the effect cannot be otherwise than detrimental to those lower parts of the estuary, including the bar if there be one, which are in every respect the most important."

"It has been often proposed that large tracts of land should be reclaimed on the upper portions of rivers, and it has been argued that the channel so contracted will of course become deeper than before."

Owing to the disastrous consequences which have resulted from large proportionate enclosures from estuaries, a Bill was brought into Parliament to the effect that no such work should be commenced without authority from the Admiralty, who must first be convinced that no prospective damage to the navigation might be apprehended.

Unfortunately, for ages past large areas of the estuaries of bar harbours have been enclosed, from which cause the bars at the entrances rose higher and higher, the depths on some bars were much reduced, and on others so much so that, as harbours, these estuaries became almost extinguished. The Bill was brought into Parliament by the late Mr. Joseph Hume, and from it may be said to have resulted the Tidal Harbours Commission, by which, under the conduct of Admiral (then Captain) Washington and others, a large amount of valuable and interesting evidence was collected and embodied in its reports. "From calcula-

tions of the relations subsisting between the low-water sectional areas and the amount of tidal water lying landwards of the section lines" (continues Mr. T. Stevenson), "I found that in the narrow artificial channel of the River Dee, Cheshire, the efficacy of a given quantity of tidal water was greater than in navigations which were left more nearly in a state of nature. But, as already stated, the effect of excluding water being prejudicial to the lower reaches, ought to lead us to other means of improvement than the erection of such high bulwarks."

"The effect of low-water training walls which do not confine the strength of the current, but simply guide the first of the flood and the last of the ebb-tide, are now well known from their extensive employment—as for example on the Clyde, Ribble, Lune, Nith and other rivers."

The proportion of backwater to the low-water sectional area at the mouth or over the bar of any navigation will depend on the nature of the bottom, the force and direction of the waves, and the direction in which the stream enters the sea. The proportion for four navigations is as under:—

RATIOS OF LOW-WATER SECTIONAL AREAS OF RIVERS AT THEIR JUNCTION WITH THE SEA, AND THE TIDAL CAPACITY OF THEIR ESTUARIES, AND DISCHARGE OF FRESH WATER.

Boyne . . .	29·7 sq. yds.	to 1,000,000 cub. yds.	of backwater.
Tay . . .	27·4	"	"
Mersey . . .	22·5	"	"
Montrose . .	28·0	"	"

ARTIFICIAL SCOURING.

On this subject the remarks of Mr. Stevenson are very important.

"The preservation of the depth of harbours at a lower

level than that of the original bottom is so often attended with great difficulty and expense. Where the deposit is confined to the space between high- and low-water marks, the scouring by means of salt or fresh water is comparatively easy ; but where there is a bar outside the entrance, the case becomes very different. The efficacy of the scour, so long as it is not impeded by enlargements of the channel, may be kept up for long distances, but it soon comes to an end after it meets the sea."

"When the volume of water liberated is great compared with the *alveus* or channel through which it has to pass, the stagnant water which originally occupied the channel does not, to the same extent, destroy the momentum as where the scouring has to be produced by a sudden *finite* impulse. In the one case the scouring power depends *cæteris paribus* simply on the relation subsisting between the quantity liberated in a given space of time, and the sectional area of the channel through which it has to pass ; while in the other it depends on the propelling head, and the direction in which the water leaves the sluice.

Mr. Rendel's scheme for Birkenhead was on the former principle, which it must be recollected is only applicable where the soil is easily stirred up. In all cases of scouring it is of course an essential condition that such a velocity be generated as is necessary for acting upon the soil. The large amount of back-water will be inoperative if it has less than what may be called the *effective velocity*, or that required for acting on the particular kind of soil of which the bottom consists.

If, for example, the discharge of a river be utilised by the construction of regulating reservoirs, there will be a diminution of scouring power, because a sudden flood will remove what the same, or even a much greater,

quantity of water will never effect if liberated more slowly.

The first example of artificial scouring in this country seems to be due to Smeaton, who used it effectively at Ramsgate in 1779. At Bute Docks, Cardiff, designed by the late Sir W. Cubitt, the access to the outer basin is kept open most successfully by means of artificial scouring on a gigantic scale. The entrance was cut through mud banks for a distance of about three-fourths of a mile seaward of high-water mark. The initial discharge when the reservoir is full is stated to be 2500 tons per minute. I have known even so limited a discharge as one ton per second, produce very useful effects in keeping a small tidal harbour clear of sand."

DURATION OF SCOURING.

"Minard remarks that when a channel has to be maintained by regular and habitual scouring, the whole effect is generally produced in the course of the first quarter of an hour. This was made the subject of particular investigation at Dunkirk, where sections of the channel were made before and during the scour; and it was found that there was no alteration of the sectional area after the first quarter of an hour.

"He also points out, as the best *form of scouring reservoirs*, that which will admit of the largest discharge in a given time, or, in other words, where the mean distance from the orifice is a minimum. Such a form is obviously the semicircle having the point of discharge in the centre."

EFFECTIVE VELOCITIES OF CURRENTS.

The following are results of experiments, made by

different observers, on the size of particles which are moved by currents of different velocities :—

3 in.	per sec.	= 0·170 mile per hour	will just begin to work on fine clay.
6 in.	„	= 0·340 mile per hour	will lift fine sand.
8 in.	„	= 0·4545 „	will lift sand as coarse as linseed.
12 in.	„	= 0·6819 „	will sweep along fine gravel.
24 in.	„	= 1·3638 „	will roll along rounded pebbles 1 in. in diameter.
3 ft.	„	= 2·045 mile per hour	will sweep along slippery angular stones of the size of an egg.

SEND OR SCEND OF THE WAVES.

On this subject the writer has appended some extracts from a communication from Mr. Meik, C.E., to Mr. T. Stevenson. “When passing over a wave with a 10-ft. lift, some of our small colliers would send $7\frac{1}{2}$ to 8 feet, whereas a long screw collier of 180 feet length would only send 5 feet. A small sailing collier would probably draw about 12 feet water. A large fishing-boat would draw 7 feet, and might send possibly 4 feet, but of course this would vary from the form of hull, and no class of craft differ more in their sections than fishing-boats, very full bodied boats being alone fit for some stations. The send is *generally* taken at *two-thirds* of the greatest lift of the wave for ordinary colliers.”

LIGHTHOUSES.

Every fishing harbour should at least be provided with one lighthouse, or an equivalent arrangement of one or more lamps. Where there are outlying dangers, leading lights should be established, by keeping which in line, or “in one,” as sailors term it, the helmsman may be able to avoid such dangers.

When alteration of course is necessary after passing a danger, two more lights in one, of a different colour, should be provided for steering on the fresh line of bearing. Sometimes a screened light is used showing only over a sector of a certain number of degrees, to keep boats or vessels on a safe bearing.

The two following works may be consulted with advantage: 'Rudimentary Treatise on Lighthouses,' by Alan Stevenson, LL.B.: Weale, London, 1850; and 'Lighthouse Illumination,' by Mr. T. Stevenson: Weale, London, 1859.

"THE MOCK OR APPARENT LIGHT"

is a simple means of illuminating a sunk rock or other danger which is inaccessible in stormy weather. This object is attained without requiring a lamp or any kind of flame to be placed on the rock itself. A pole or beacon, carrying on its top a lantern containing different forms of optical agents (depending on the nature of local requirements), is all that is needed on the rock itself. A beam of parallel rays, proceeding from a distant lamp placed on the shore, is thrown seawards upon the lantern on the beacon, where the incident rays are re-dispersed by the apparatus, so as to produce an optical deception to the eye of the mariner, who supposes he sees a lamp burning where there is really none. The apparent light is also very useful for marking the seaward ends of breakwaters or piers. In entering harbours at night, sometimes one pier-head must be hugged, sometimes the other, according to the direction of the wind; and so critical in stormy weather is the taking of a harbour, that even a single yard of distance may be of consequence. Those only who know

from personal experience the anxiety which is felt in a dark night on entering a narrow-mouthed harbour with a heavy sea running, can appreciate the vital importance of discovering, at as great a distance as possible, the exact position of the *weather pier-head*. Harbour lights are from their exposed position often inaccessible in stormy weather. At some places, too, the outermost breakwaters are altogether disconnected from the shore, and can only be reached in fine weather from a boat. The efficiency of an apparent light in such cases of difficulty has been fully tested at the entrance of Stornaway Bay, in the Island of Lewis, where it has been in use for the last nine years, and has been favourably reported on by the captains of many vessels that have run for the anchorage at night."

"The beacon, surmounted by the apparent light apparatus, which distributes the rays which fall upon it over an azimuthal angle of 62° , is placed on the Arnish Rock—a sunken reef lying in the entrance to the bay. The lamp with its apparatus is placed on the land, at the distance of about 530 feet from the beacon." In many cases gas has superseded oil, and for harbour lights it is now almost universal at towns of any size. On the ends of breakwater piers, which in many cases cannot be safely visited in bad weather, the gas is kept daily as well as nightly burning, being turned down low by day, by stop-cocks placed in a safe position in gales.

DANGERS OF DEEPENING THE ENTRANCE OF HARBOURS OF SMALL REDUCTIVE POWER.

This matter has been previously referred to, and Mr. T. Stevenson's observations are here given at length. "One cause of disturbance in harbours, which is often not sufficiently considered, is the inconsiderate deepening of

the entrance without making, at the same time, a proportionate enlargement of the internal area, or providing other works for counteracting the effect. As the depth of the water is more and more increased, waves of greater height become possible at the entrance, so that large waves gain admission to the interior."

"At the port of Sunderland, Mr. D. Stevenson recommended the removal of nearly the whole of the inner stone pier, and the substitution of works of open frame work, in order to tranquillise the interior. These works, which have been quite successful, were rendered necessary by the frequent dredging of the channel at and near the entrance."

ADVANTAGES OF TWO ENTRANCES TO A HARBOUR.

On this matter Mr. T. Stevenson instances Peterhead, which has two harbours, the north and south. These were united some years since by a canal, and the advantage has been of the most marked character. Vessels can now clear out by the north or south mouth, according to the state of wind or sea. In making such an arrangement, however, Mr. Stevenson observes that some caution is necessary, as the *run* is apt to extend from the one harbour to the other, unless there be a considerable area; and where the tides are strong the currents may also prove troublesome.

Refuge harbours have constantly two entrances, and are of so great extent that they would often be inconvenient to enter if only one were provided. Cherbourg, Portland, and Plymouth have each two entrances. As these large spaces of water are enclosed anchorages, and not harbours in the limited sense of the term, the objections regarding the *run* of the ground-swell do not of course apply.

THE BEST SYSTEM OF
LIFE INSURANCE FOR FISHERMEN,
AND OF
INSURING BOATS, GEAR, NETS, ETC.

"ARMATEUR."—[J. W. DE CAUX.]

LIFE INSURANCE FOR FISHERMEN.

IT would be a work of supererogation in the present state of ethical knowledge to argue as to the national importance or individual value of insurance. The colossal—I might say the cosmopolitan—insurance offices which, on fair and equitable terms, are willing to undertake the risks that inevitably attend upon life and property, are amongst the most important beneficent institutions of our land ; and the magnificent Orders of Providence—as they might be truly called—which watch over the working man in sickness and in death, supplemented as they are by benefit clubs which permeate the whole country, prove beyond all doubt that the true principles of insurance are well understood and widely appreciated by all classes of the community. The ordinary Englishman and the cannie Scot are, as a rule, as provident in this respect as their means will allow, and scorn to shelter themselves from reproach by such a subterfuge as did the witty Irishman, who, when asked why he had not provided against a “rainy day,” naively replied : “ Please, your honour, and so I did, but there came two ! ”

There are, however, some few classes whose employments and pursuits are so exceptionally dangerous in their nature, that a consideration of how best their special and peculiar risks can be met and provided against will be both interesting and, it is to be hoped, profitable. Foremost amongst

such classes are, undoubtedly, fishermen and fishing-boat owners. The former, when pursuing their calling, literally carry their lives in their hands ; whilst the risks of the latter are so great that no underwriters are found willing to insure more than a portion of their property, and that, too, at an exceedingly high rate. I purpose to consider the subject of insurance as it affects fishermen and fishing-boat owners in all its bearings ; and in order that I may do so in a clear and precise manner, I shall treat it under the three following heads :—Insurance of Fishermen ; Insurance of Fishing-boats and their Stores ; Insurance of Fishing Gear.

INSURANCE OF FISHERMEN.

It would be impossible to over-estimate the importance of insurance to fishermen, because there is no avocation which entails greater risk to life and limb than theirs. Occasionally the country is startled by the results of some terrible gale, in which many gallant fishing craft, with all their crews, have been engulfed by the treacherous sea ; but continually, all around our coasts, there are being drowned fishermen of whose deaths the general public never even hear. Reliable statistics on this point it is impossible to obtain. Were the sea-coasts divided into districts, as they should be, with competent officers to report regularly to Government upon all matters affecting, directly and indirectly, fishermen and their calling, this matter would receive due attention ; and I doubt not it would then be found that the accidental mortality amongst fishermen is as large, if it be not larger, than the accidental mortality amongst even the coal-miners of the whole country.

Putting aside all eleemosynary considerations, the

question of how best a fisherman can insure himself against sickness, accident, and death, is one about the answering of which there cannot be, or ought not to be, two opinions. It is a question which has long ago been answered in the most unequivocal, because practical, manner, by such Friendly Societies as the Ancient Order of Foresters, and the Manchester Unity of Odd Fellows—Societies which, as I have already said, are in the best and truest sense of the words, Orders of Providence and Benevolence. Were it not a matter beyond all doubt, it would be difficult to believe that these noble Orders insure all classes of the labouring population upon precisely the same terms. A fisherman or a coal-miner pays no more than any other labouring man, and he is entitled to receive, and does receive, exactly the same benefits. For very small sums of money, varying from sixpence to ninepence per week, fishermen can insure for themselves and their families the following benefits :—in case of sickness or accident, 12s. per week for six months, and 6s. per week for a further six months, with the best medical and surgical attendance free ; the sum of £10 for the burial of the wife, and the sum of £12 at the death of the fisherman himself. This latter sum is paid, even if the insurer be lost at sea, and his body be not recovered. On almost equally liberal terms fishermen can also insure themselves against accident to limb and life ; and, inasmuch as no labouring man is better able to pay the necessary premiums than is a fisherman, there is little or no excuse for his not so insuring for the benefit of himself and his wife and family. And that very large numbers of fishermen do avail themselves of the advantages thus offered them, is proved by the fact that fishermen form a very large percentage of the members of the Friendly Societies which are established round our

coasts. The desirability, however, of their doing so, every one of them, cannot be too strongly impressed upon them, and upon their wives, some of whom are, unfortunately, so careless and improvident, that they frequently neglect to keep up the trifling payments which would secure to them and their families the very great benefits which these Societies offer to them.

Fishermen, also, should be induced to abstain from all reckless conduct whilst at sea, and to wear life-belts when engaged in ferrying fish, or when performing any other peculiarly-dangerous duty. Familiarity with the sea breeds contempt for its dangers ; and, unfortunately, the spirit of bravado tempts many fishermen to ridicule those of their comrades who are careful and cautious. This is the true reason why so few fishermen will wear life-belts ; for it is a well-known fact that, although owners at their own expense have frequently provided such safeguards for their crews, the men themselves have refused to avail themselves of such liberality, and in some instances the belts have been wantonly destroyed or thrown overboard. Fishermen should also be encouraged to protect themselves in some degree by learning to swim, for it is a remarkable fact that a large proportion of them cannot swim. Fatal accidents at sea frequently occur through recklessness or carelessness ; and many a fisherman who is now drowned would escape with simply a wetting if he only knew how to swim. Whether it would be wise to compel every fisherman—say every fisherman under twenty years of age—to pass an examination in swimming, it would be difficult to say, but, at all events, special facilities and inducements should be afforded and offered them for the acquiring of so healthful and valuable an art. The several points I have here referred to might be argued and illustrated in great detail,

but inasmuch as in my opinion they are self-evident propositions, it would be simply a waste of time to enforce their truthfulness at greater length. One suggestion, however, I would make to the powers that be, and that is as to the advisability of their insuring—say to the extent of £100—the life of every fisherman who belongs to the Royal Naval Reserve. The Government of the day could do this at but a trifling cost to the country, and in my opinion it would be a very great inducement to fishermen to enrol themselves in this most useful and patriotic corps.

INSURANCE OF FISHING-BOATS AND THEIR STORES.

The best system of insuring fishing-boats and their stores—that is, their masts, sails, rigging, and all other things necessary for their navigation—from damage by fire, wind, or water, either at sea or in harbour, is that which is known as “Mutual Marine Insurance.” It is the best system, because it is the cheapest and the safest, and because, as I shall presently show, it secures to boat-owners advantages and privileges which no other system of underwriting can pretend to offer them. Mutual Marine Insurance, as its name implies, means nothing more nor less than that boat-owners should insure each other’s vessels upon the principle of co-operation, and should thus reap all the profits of the underwriters, as well as the advantages of the insurance itself. It is the cheapest system, because the statistics of Mutual Insurance Societies prove that, even in exceptionally-disastrous years, the rate of insurance of fishing vessels at Lloyds is considerably more than is required for the repair of all losses; and that it is the safest system the slightest reflection will show, because the boat-owner has the guarantee for his insurance, not of a mere name—which

is all the professional underwriter is to him—but of many business men, all of whom are personally known to him, and of whose position and respectability he has ocular demonstration. The professional underwriter is a gentleman who expects, and naturally expects, to reap a profit from his transactions, and, therefore, all the rules and regulations which govern underwriting, are made and drawn primarily for the benefit of the underwriter, and not for the benefit of the insured. No other logical inference can be drawn than that the interests of the underwriter are, and must be, considered paramount to those of the boat-owner, because the underwriter calculates upon a profit for himself out of the premiums paid by the insurer. The Mutual Marine insurer does not calculate upon or expect anything of the kind. All he agrees to and undertakes is, when required, to pay his share towards helping a brother boat-owner when in distress; and all he calculates upon and expects is to be assisted in a like manner by his brother boat-owners whenever he himself may need aid. There are, however, Mutual Marine Insurance Societies, *and* Mutual Marine Insurance Societies, and I shall, therefore, proceed to describe the salient features of that system which, in my opinion, is incontestably the best. Comparatively speaking, it is a new system, but it has been tried for some years with marked and increasing success; its principles are spreading, and it bids fair in a short time, if not to absorb, like Aaron's rod, all other systems, at least to assimilate them to itself.

Legal liability and financial position of underwriters.—

In considering the subject of Marine Insurance, the first question to be asked and answered is as to the legal liability and financial status of the underwriters; and the primary advantage which is offered by the system I advocate, is

that it gives to the insured the ample guarantee of a legally-constituted company. In ordinary marine insurances, the contract between the parties is simple enough. The boat-owner, having paid his premium, receives a stamped policy of insurance, which is signed by the various underwriters who have divided the risk between them, and each of whom is only liable for the amount which is written against his name. Underwriters do not pledge each other's credit, and are not responsible for each other's debts. If there were half a dozen underwriters to a policy, and, in the event of a loss, only two of them were able to pay, the insured boat-owner would have to be satisfied with the amounts for which the two solvent underwriters were personally responsible, and would have to lose the other amounts which the four insolvent underwriters could not pay. And, were he disposed to commence legal proceedings, he would have to take such proceedings against the defaulters separately—a costly and hazardous course, which but few boat-owners would care to adopt. A boat-owner, therefore, has to trust to the honour of each underwriter, in the same manner that the backer of a horse in a race has to trust to the honour of the bookmaker with whom he bets, although he may know no more about him than he does about the man in the moon. Some Mutual Marine Insurance Associations are similarly situated, and should be avoided for precisely the same reasons. An Insurance Association without a legal status would have almost insuperable difficulties to overcome, were it to attempt to compel its members to pay any call that might be made upon them ; and a boat-owner insured with such an Association would, in the event of a loss, have still greater difficulty in enforcing payment of his demand if the Association either could not, or would not, pay him.

A Mutual Marine Insurance Company, according to the system I advocate, should be incorporated under the provisions of the Companies Acts, 1862 and 1867, and its position, as well as the position of the insured, would then be secured. Such a company could carry on its business with but little trouble, and without unnecessary risk on either side. Being legally constituted, it could issue insurance policies under its seal; and whilst, on the one hand, insuring members could be compelled to pay the calls made upon them, on the other hand, insured members could enforce the payment of whatever might be due to them.

Entrance fees and calls.—In a properly-constituted Mutual Marine Insurance Company, there is no necessity for the entrance fees to be large, because, whenever money may be required for the payment of a casualty, it can be readily raised by means of a call; and, for the self-same reason, there is no necessity for such a Company to hold a large balance in hand. A respectable balance at the bank is undoubtedly a very pleasant thing, but no business man keeps even that if he can find more profitable employment for his spare capital; and what is true with regard to an individual is equally true with regard to a Mutual Marine Insurance Company. A boat-owner who insures in the ordinary manner must annually pay a year in advance, and as the premium is never less than 8 per cent., it follows that a boat-owner who has three or four vessels must, every Christmas, be prepared to pay the underwriters in hard cash a considerable sum of money. If, however, he be insured with such a company as I advocate, his entrance premium would be only 2 per cent., while the calls which from time to time might be made upon him would rarely exceed 4 per cent. per annum. And every business man

knows that such a system must be highly advantageous to all persons, especially to those who are not overburdened with this world's wealth. Some gentlemen are in favour of holding a heavy reserve fund in hand, but I cannot see any advantage in such a course. A call for what money may be required can be made and collected in a few weeks, and in my opinion it is far better that moneys which are not needed immediately, should remain fructifying in the pockets of the shareholders, than that they should be placed in a fund from which little or no benefit would result, even to the company.

Average and total loss insurance.—A feature, and a very proper feature, of Mutual Marine Insurance, is that no vessel shall be insured for its full value except as against total loss. Such a rule is a great safeguard against fraud, because, as the owner has to underwrite himself to a certain extent, he is specially interested in keeping his vessel and her stores in sea-going trim, and, in the event of damage being done to her hull or stores, in seeing that such damage is properly and effectually repaired at the lowest possible cost.

All damage should be paid for.—I have already pointed out that the rules of ordinary underwriting are made for the primary and special benefit of the underwriter, and the regulation which provides that no damage shall be paid for unless it amount to a certain sum, proves this statement to be correct. I am of opinion that all real damage, as distinguished from wear and tear, should be paid for. According to the ordinary rule, if the limit were fixed at £50 the underwriter would not contribute a penny-piece towards the repair of any damage, the cost of repairing which would be below that sum; if the repairs amounted even to £49 19s. 11d., the underwriter would be exempted

from liability in the matter. This, I think, is an unwise as well as an unfair regulation. Small repairs will, of course, be required from time to time, but common sense will enable any one to determine what is the result of ordinary wear and tear, and what is the result of exceptional damage. If, in order to avoid petty disputes, such a rule be considered absolutely necessary, then the amount should be fixed at a low sum, because, however immoral it may be, it is only natural for an owner, when his vessel has sustained damage, to wish that the damage may amount to the sum at which the underwriters will recognise it, and in consequence he will not scrutinise closely the bills of the tradesmen which, when added together, will more than cover the exempted amount. The rule, moreover, is bad for this reason, that when the damage amounts to more than the sum fixed to be exempted, the underwriter pays upon the whole amount without deducting anything for partial exemption.

No deduction should be made for "New for Old."—It is a special feature of the system I advocate, that no deduction whatever is made for what is known to underwriters as "new for old." The ordinary underwriting rule is that, whatever may be the amount of damage which the underwriter has undertaken to pay, he shall be permitted to deduct therefrom one-third, because, in repairing the damage, new materials have been, or are supposed to have been, used. This, in ordinary underwriting parlance, is known as deducting "new for old." The rule itself is a venerable one, and, until recently, was universal. Repugnant as it is to justice and common sense, it is difficult to imagine on what grounds it was first adopted, and why it has not long since been relegated to the limbo of monstrosities and antiquated absurdities. The principal

argument—if argument it can be called—that I have ever heard adduced in its favour, is that it must be just and equitable because it has universally been acted upon ever since vessels have been underwritten. It might just as well be said that any old law, which circumstances and improved knowledge have rendered obsolete, but which has not been expunged from the Statute Book, is just and equitable ; or, as Pope puts it, that “ whatever is, is right.” History teaches us that, in times gone by, it was a universal custom in England to cause an accused person to walk barefoot over red-hot irons, and that he or she was adjudged to be guilty or innocent according as he or she was injured or not. But because such an ordeal was universal, it does not follow that it was just and equitable ; and I fail to comprehend the logic which leads to the conclusion that a deduction on account of new materials used in repairing an old vessel must necessarily be equitable because it is universal. Such reasoning, if reasoning it can be called, is simply fallacious. It is true that damage cannot be repaired without labour, but the same labour must be employed, whether the damage be repaired with new or old materials, and, provided that the materials be sound and good, and fit for the purpose, as they ought to be, it matters not whether they be new or old. Why, then, should a boat-owner be mulcted in an extra sum for the repair of the damage, when he already pays his proportionate part according as he may be insured for two-thirds, three-fourths, or any other amount ? The labour would be the same, whether the materials were new or old, and ought not in justice to be charged for in any case ; and were the materials used simply suitable for the purpose, there could be no pretence whatever to charge for them at all. To say that a vessel, after being repaired, must be much better

than before she was damaged is simply absurd, and yet this is what underwriters assert as being true. The word they employ when making this assertion is exceedingly appropriate, but it tells against instead of for them. The word is "melioration," which means, "the act or operation of making better." Making what better—the damaged part of the vessel, or the vessel itself? If it mean simply the damaged part, as I contend it does, then the boat-owner ought not to be charged with "new for old," because he is entitled to have the damaged part made as sound and as good as it was before it was damaged. He is not entitled to, and he does not ask for, more than this, but it would be foolish to expect him to be satisfied with less. If the term apply to the vessel itself, then I would ask how and why can the mere repairing of damage make the vessel better than it was before it was damaged? Speaking paradoxically, the strongest part of a chain is its weakest link; and the same reasoning which proves this almost self-evident proposition, demonstrates clearly that the mere act of fixing new stanchions and covering-boards, or of replacing broken planks, cannot by any possibility make the hull of the vessel better than it was before the accident occurred which necessitated the repairs. A vessel which has been damaged and then repaired, is generally worth less than she was before the occurrence took place by which she sustained injury, and thereby a loss has been entailed upon the owner. Why, therefore, in addition to such loss, and in addition to the amount which he has to pay for underwriting himself to a certain extent, should he be called upon to pay a third of the cost of the repairs necessary to fit his vessel again for sea? New materials, when properly fitted by skilled labour, undoubtedly make a vessel better than she was when in a damaged state, but it is

incorrect to assert that such repairs, which have been necessitated by accident, would make her better than she was before the damage had been sustained. It may be said, as indeed it has been said, that, under certain circumstances, if no charge were made for "new for old," an owner would actually make a profit out of his loss at the expense of the rest of the shareholders. Well, if an Insurance Company permit an insured vessel to go to sea with a worn-out suit of sails, it deserves to pay for the remissness of its surveyors. The mere fact that the surveyors of a Company permit a vessel to go to sea is presumptive evidence that they consider her to be in sea-going trim. If she be not in sea-going trim, or if she be not properly found in stores, the surveyors have only to cause a proper notice to be served upon the owner; and if she be sent to sea without the necessary certificate, she will go uninsured, and solely at her owner's risk. Further, if, as in the case supposed, a distressed shareholder benefit somewhat by the arrangement, so much the better for him. Help is most needed in the time of distress, and the greater the help the greater the blessing. The extra cost to the shareholders collectively would be but small in comparison with the large extra benefit which the distressed shareholder would receive.

Wear and Tear.—But the injustice of this rule is intensified by the extraordinary and unjust signification which underwriters are in the habit of giving to the term "wear and tear," for which, of course, nothing is paid. The term "wear and tear," and the word "damage," when used in their ordinary significations, have totally different meanings—meanings about which one would have thought there could be no doubt. The term "wear and tear" means the

gradual deterioration which constant exposure to the weather and constant use inevitably bring about, and for which no sane person would expect compensation; whilst, on the other hand, the word "damage" signifies sudden and, comparatively speaking, great injury. But the underwriter claims for the term "wear and tear" a widely different signification. In his view "damage" means "wear and tear," no matter how great it may be, or how suddenly it may have been caused. If the sails of a vessel be blown away by a heavy gust of wind, or if a vessel break from her anchor when riding out a gale, the underwriter considers such losses to be simply "wear and tear," and declines to contribute towards paying for them. He considers himself to be liable only if the sail be cut away, or if the anchor be slipped from, ostensibly for the safety of the vessel. I use the adverb "ostensibly," because it is well-known that masters of vessels who have the interests of their owners at heart, and who know anything about underwriting, act accordingly. To my mind, this definition of the term "wear and tear" is most unjust. An office desk, which has been dented and otherwise disfigured by being constantly used, is in a very different state to one the panels of which have been suddenly smashed with a poker; and a sail, even after twelve months' use, is in a widely different condition to that of a sail which has been blown to ribbons by a violent gale of wind. Were it necessary, I could prove the truthfulness of what I have here written, by detailing cases exactly in point; and I need hardly say that, according to the system I advocate, no distressed boat-owner would be treated in so palpably unjust a manner. In order, however, to make my meaning perfectly clear, I will give an illustration of the working of the two systems Two vessels, each of the same value,

shall be insured, the one with underwriters in the ordinary manner for three-fourths her value, and the other with the company whose system I advocate for two-thirds her value, and both vessels shall be damaged, or be liable for damage which they have caused to other vessels, to the extent of £360. The owner insured in the ordinary manner would be settled with as follows: As he insured his vessel himself to the extent of one-fourth, the sum of £90 would be first deducted, leaving a balance of £270. From this sum the one-third "new for old," amounting also to £90, would be deducted, and the boat-owner therefore would receive the sum of £180 towards the payment of his damages of £360—in other words, although he would pay premiums upon three-fourths of the value of his vessel, he would be compelled to underwrite himself to the extent of one-half. The owner insured with the Company I represent would be settled with thus: As he insured himself to the extent of one-third, the sum of £120 would be deducted, and he would be paid the balance, £240. The boat-owner therefore, insuring with my Company for only two-thirds, would get £60 more than the boat-owner insuring in the ordinary manner for three-fourths the value of his vessel.

Vessels off Risk.—A very special feature of the system I advocate is that vessels may be declared "off risk" at their owners' option, upon a written notice, signed by the insurer, being given to the secretary of the company. This rule is based upon the common-sense principle that only those vessels which are liable to sustain damages themselves should be called upon to contribute towards the payment for damages which may be sustained by other vessels; in other words, that it is unjust to charge boat-owners whose vessels may be hauled up, or which

may be undergoing repairs, and who therefore cannot receive any benefit, for the repair of damages which may be sustained by vessels at sea. When this rule was first promulgated and acted upon, it was believed by many persons to be of a suicidal nature, and that it would soon bring to grief the company with which it originated. Amongst other things, it was said that owners, whose vessels might be in port during bad weather, would, of course, declare their vessels "off risk," and that thus a very heavy responsibility would be thrown upon owners whose vessels might be at sea at the time. But these evil forebodings have not been realised. On the contrary, the working of this rule has been attended with triumphant success. The experience of those who have watched its working for several years teaches them that an owner does not declare his vessel "off risk" until she be actually hauled up in a place of safety—and that, too, for a considerable period—because otherwise, if while in the harbour she be damaged by a passing steam-tug or from any other cause, he would have no claim for compensation against the company. Vessels, and especially small vessels, are always liable to casualties, even when at their moorings in a harbour; and boat-owners fully understand the risk they run, and seldom permit their craft to remain uninsured. Moreover, experience teaches this fact, that no boat-owner gives notice of "off risk" merely for the purpose of avoiding the effects of a gale at sea at a time when his own vessel, or one of his own vessels, happens to be in port, because every seafaring man knows that when a gale is blowing on shore there may be comparatively fine weather upon the fishing-grounds at sea, and, on the other hand, that, though it may be fair weather in port, there may be heavy weather outside. Since the making of this rule by

the Company I represent, it has worked to the satisfaction of all the shareholders.

Fishing Gear should be Free from Average.—It is well-known that fishing gear is never insured, and therefore in common fairness it ought never to be made to contribute even indirectly to the repair of losses. Fishing gear is included by ordinary underwriters in the valuation of a vessel and her stores, in order to swell the amount, and so increase the sum which the boat-owner has himself to underwrite ; in the case of salvage it would be made to contribute its share or quota of the salvor's claims, but it is never recognised by an ordinary underwriter as a loss for which he is liable, and consequently it is never paid for. Thus, for instance, in the case of a trawler, the value of the trawl-gear would be included in the valuation of the vessel, and in the event of salvage being paid it would be paid on the total value, whereas, if the trawl-gear were totally lost—even if lost when being used for the preservation of the vessel—nothing would be paid towards its loss by the underwriter. The same rule when applied to drift-fishing vessels is still more unfair, because the fishing gear of a drift vessel is oftentimes as valuable as the vessel itself. This is most unjust. A boat-owner who cannot possibly sustain a claim for damage ought not to be compelled to contribute towards a claim for damage. On these grounds all fishing gear should be “free from average,” as the phrase is, the word “average” in underwriting parlance meaning the proportion which each description of property should pay towards repairing the damage done. And it is because boat-owners can at their own option declare their vessels “off risk,” and because “all fishing gear is free from average,” that a Mutual Marine Insurance Company, based upon the system I advocate, can insure indiscriminately

both trawlers and drift-fishing vessels upon equitable terms—advantages which can be obtained from no other underwriters, be they irresponsible individuals, private adventure associations, or incorporated companies.

Stamped Policies.—It appears to me, then, that the “best system of insuring fishing-boats” is that of the Company whose principles I advocate, because, being co-operative in its character, the Company not only gives special advantages to its shareholders, but at the same time it divides all its profits, both direct and indirect, amongst them. This company is no myth. For years it has been worked, upon the principles which are here enunciated, to the satisfaction of all concerned, and, in consequence, it has been steadily growing in repute and strength. It has but one drawback—a drawback which the Government could easily and ought readily to remedy—the necessity to issue new policies every year. In all classes of insurance other than marine—life, fire, and accident—policies hold good so long as the contract between the parties lasts; and what is right for life, fire, and accident, ought certainly to be right for fishing-boats. I trust that Edward Birkbeck, Esq., the fisherman’s friend, or some other M.P., will take this matter up at once, and that in a short time there will be no necessity for the yearly renewal of marine policies on fishing-boats. To the Chancellor of the Exchequer the revenue from the sale of stamps for the insuring of fishing-boats must be a matter of utter indifference, but to Mutual Marine Associations the subject is one of some importance, as, besides the stamps, which are practically so much money wasted, the non-necessity for yearly policies would save a vast amount of unnecessary labour and trouble.

INSURANCE OF FISHING GEAR.

Of all insurance problems, that of how best to insure "fishing gear, nets, &c.," is the most difficult to solve. The risks are so great and so perplexing that hitherto underwriters have not dared to undertake them. Only those who are actually engaged in the fishing business are aware of its intricacies and the dangers surrounding it ; and the better these are understood the more bewildering does the question of how best to insure against them appear to be. Let me point out some of these difficulties. Speaking in a general sense, fishing gear may be divided into two kinds, trawling gear and drifting gear. Trawling gear consists of beam, heads, net, ground-rope, bridles, and warp ; drifting gear of nets, bowls, and warp-ropes. The value of the former may be estimated at from £60 to £90 ; that of the latter from £200 to £400. The size and weight, and consequently the value, of a complete trawling gear, depend principally upon the size and weight of the vessel on board which it has to be worked ; but other considerations than these must be borne in mind in estimating the value of a working "fleet" of drifting gear. Drift-nets differ in "ply," in the number of meshes to the yard, and in their depth and length ; and warp-ropes differ in the materials of which they are made, as well as in their size. Add to these facts that the number of nets forming a "fleet" varies according to the size of the fishing vessel employed, and other circumstances, and some faint conception of the initial difficulty in solving the question asked will be obtained. It would be a very troublesome matter, therefore, to ascertain the value of a drifting "fleet," and this trouble and expense would have to be incurred at least once in every season, because warp-ropes, and especially nets,

deteriorate very rapidly in value. Having estimated the value of the gear, the next step would be to calculate the dangers to which it is exposed when actually at work in the sea ; and such a calculation would have to be made by some kind of "rule of thumb," because no statistics or facts of a reliable nature to assist in the settlement of the question are obtainable. Here, then, one would be metaphorically, if not literally, at sea. The gear is put overboard in fine weather and broad daylight ; after being immersed for some hours it may have to be hauled again on board in bad weather and darkness. Oftentimes a trawl-net becomes entangled with some impediment at the bottom of the sea, in which case the net is partially or totally destroyed ; and it is no infrequent circumstance for the whole of the gear to be entirely lost. A drift-vessel is sometimes compelled to "hang to its nets" for two or three days ; and it is no uncommon occurrence for a vessel to be parted from its "fleet of nets" by a steamer, or by bad weather, or to be cut from it for the safety of the crew. Contingent upon the speculative character of deep-sea fishing, there are other dangers whose name is "legion," and the more one contemplates them, the deeper and more certain becomes the conviction that, in the matter of fishing gear, a boat-owner must be his own underwriter.

I can think of but two plans by which fishing gear could be *partially insured*, and I use the words I have italicised in their widest signification. To insure fishing gear fully, or indeed to insure it at all under every circumstance, is a Utopian dream. The one plan is to insure a certain proportion of its agreed value in a manner similar to that in which a certain proportion of the value of a vessel is insured against total loss ; in such a case the sum insured would be paid only in the event of the nets and gear being entirely

lost with the vessel on board of which they might be. The other plan is for boat-owners to agree among themselves to pay each other, in the event of a loss of nets or gear, certain sums of money, or to give each other proportionately a certain number of nets. Whatever is done in this manner, however, must be done in the spirit that "it is more blessed to give than to receive."

THE
RELATIONS OF THE STATE
WITH
FISHERMEN AND FISHERIES,
INCLUDING
ALL MATTERS DEALING WITH THEIR
PROTECTION AND REGULATION.

"THE GREATEST GOOD OF THE GREATEST NUMBER."

[C. E. FRYER.]

OUTLINE OF ARGUMENT.



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THE RELATIONS OF THE STATE WITH FISHERMEN AND FISHERIES.

AN industry in which, in the United Kingdom alone, some 150,000 persons are directly engaged as fishermen ; which gives employment to at least an equal number of persons as curers, packers, &c., and, indirectly, to a still larger number as makers of nets and hooks, barrels, and other apparatus and appliances for the equipment of the boats ; in which capital to the extent of not less than three or four millions sterling * is invested ; the value of whose produce

Extent and
value of the
fishery
industry.

* The statistics on which these estimates are based are very imperfect ; but from the data available the following figures are taken. In 1881, according to the Board of Trade returns, 10,357 boats were registered as fishing-boats and vessels under the "Sea Fisheries Act, 1868," in England and Wales, 766 in the Isle of Man and Channel Isles, and 14,145 in Scotland ; the total number of fishermen and boys employed by all these boats being given as 94,764. The Scotch Herring Board, however, in its report for 1881, states that in the Scotch herring, cod, and ling fisheries alone, 14,809 boats and 48,121 fishermen were engaged in that year. The report of the Irish Fishery Inspectors for 1881 states the number of registered fishing boats to have been 6458, and of fishermen and boys, 24,528. These figures give us an approximate return of, say, 33,000 boats, and about 120,000 fishermen and boys. The returns are, however, admittedly incomplete, and would in no case take account of the large numbers of fishermen whose boats are unregistered, and who do not follow fishing as their only occupation. The estimate, therefore, of a total

can hardly be estimated, but must amount to several millions sterling every year ; which has ramifications in almost every branch of trade, commerce, and manufacture ; the pursuit of which directly affects such important interests as those of navigation and proprietary rights, and which supplies not only the population of this country, but many foreign and colonial communities, with a considerable portion of their daily food, and with a variety of other articles in every-day use—such an industry as this has, naturally, strong claims on a large share of the attention of the State, and compels its interference, directly or indirectly, in many different directions. From very early times, not only in

fishing population of 150,000 does not seem to be excessive. The Scotch Herring Board estimate the average value of the 14,809 boats engaged in the herring, cod, and ling fisheries at £42 each, of their nets at £45 per boat, and of their lines at £8 per boat. This average, applied to the 33,000 boats, would give a gross value of considerably over £3,000,000 sterling. Such a calculation takes no account of the large and powerful steamers engaged in the fish “carrying” trade, nor of the whaling and sealing fleet, nor of other ocean-going vessels directly engaged in the fisheries. The figures must be taken as representing merely what may be called the food-fisheries carried on in the seas immediately surrounding our coasts. Even then they probably err, if at all, on the side of moderation. An estimate of the value of the produce of the fisheries is still less easy. The quantity of fish of all kinds delivered at Billingsgate Market—mainly the produce of the British fisheries—in 1880 was over 120,000 tons. This quantity, at an average price of only 6d. per lb., would represent a value of £6,720,000 as a portion only of the consumption of the metropolis alone. The value of the produce of the Scotch herring fisheries alone, in 1881, was probably not less than £3,000,000.

A Parliamentary return of the quantity of fish conveyed inland by railway from each of the principal fishing ports of the United Kingdom states that the quantity so carried in 1881 was, in England, 206,381 tons ; in Scotland, 59,259 tons ; in Ireland, 7312 tons ; total, 272,952 tons, which, at 6d. per lb., would be worth £15,288,000 (nearly).

England, but in almost every other country, the fisheries have been among the most important objects of legislation and popular concern ; but their real importance grew, and was only fully recognised, with the increase of population and the development of trade. More especially in the history of maritime States has the part played by the fishing industry been most conspicuous. Fish, among both Greeks and Romans, was a most popular diet, and so much importance was attached to the cheapness and freshness of the supplies of this food that the fishermen were compelled to sound a gong immediately on their arrival at the market-place so that the fish might be sold as fresh as possible, while the sellers were not allowed to sit down during market hours, that they might be induced to get rid of their produce as quickly and cheaply as possible. The ancient Greeks, however, not only developed the fisheries around their own coasts, but they carried the craft of fishing to their colonies, many of which became valuable centres for the supply of fish to the mother country. Byzantium and Sinope owed their existence to the fact that their sites were selected as admirable fishing stations, and the fisheries of the Black Sea and the Sea of Azof came to hold much the same position towards Greece as the cod banks of Newfoundland, ages afterwards, held towards England. In ancient times.

The Romans, like the Greeks, developed their fisheries to the fullest extent, and, besides seeking supplies in distant waters, they even introduced new varieties from abroad and acclimatised them, under Imperial guidance, in their own waters. In this way the celebrated *scarus*, a native of the *Ægean* Sea, was established on the Italian coast, in the reign of the Emperor Claudius. The introduction of British oysters into the ancient oyster *parcs*, at Lake Fusaro and elsewhere, is a familiar instance of this practice.

The great maritime power of Venice, again, practically owed its origin to the fisheries in the immediate neighbourhood, and in the Adriatic generally.

While Venice was at the zenith of its power the fisheries of Norway were rapidly developing their wealth, exciting the greed of rival princes, and giving occasion for more than one sanguinary war. The maritime enterprise of the Scandinavians was largely fostered by the familiarity with the sea which they acquired in the prosecution of their fisheries, which, while for centuries forming one of their principal industries and sources of wealth, have had a direct effect upon their commercial and political history.

In modern times.

Turning for a moment to the New World, we find the fisheries of Canada and of the United States engaging a large share of the attention of both people and State. The early importance of the English colonies in America was centred in their fisheries. A hundred years ago the Legislature of this country enacted the most stringent laws to prevent settlement on the shores of Newfoundland or the mainland adjoining, while it encouraged British fishermen, by the offer of considerable "bounties," to prosecute the fisheries there. At the present day Canada, Newfoundland, and the United States vie with each other in their efforts to encourage and protect their respective fisheries, whose importance is attested by the serious questions of international comity which they have involved.

Phases of legislation.

In our own country the fisheries have, from time to time, commanded the earnest attention of the State on different grounds, and legislation on the subject has passed through at least three distinct phases, which may be defined as :—

- 1st. Restrictive or Protective.
- 2nd. Promotive.
- 3rd. Administrative or Regulative.

Laws falling under the first category may, in one sense, invade the province of those coming under the second, since, though their immediate object is the limitation of the destructive powers of man, their ultimate aim is the improvement of the fisheries. In so far as they protect the fisheries from exhaustion—possible or imminent—they promote their future development ; but they are distinct, both in conception and in execution, from purely “promotive” laws—laws, that is, passed with the sole object of encouraging the public to undertake the prosecution of the fisheries without regard to the possibility of their future impoverishment.

Of the first class of legislation are those laws which, among other things, establish a close time. To the second class belong those which offer bounties on vessels employed in fishing or on fish exported. The third category comprises those laws which, taking no heed of either of the above points, merely aim at reconciling conflicting interests, at preventing moral and social abuses, and generally securing the safety and welfare of those engaged in the pursuit of the fisheries. To this last class belong laws for the “police of the sea,” for facilitating navigation, and for providing harbour accommodation. The question of harbour accommodation, of course, very closely touches the question of direct encouragement to the fisheries ; but it falls, properly, under this third category, since it is the great importance of the fishing industry that has emphasised the cry for additional harbours, and not—or at any rate not mainly—the desire to encourage the fisheries that has created the cry.

A sketch of the history of legislative enactments on the subject of the fisheries will place in a very clear light the distinction between the three different aims which the

History of
legislation.

Government has had in view in promoting fishery legislation from time to time, and will enable us to form a better conception of the true relationship which the State bears to this important industry.

As such a review will embrace a period of nearly seven hundred years, during which about three hundred statutes, dealing directly and specially with the fisheries, were added to the Statute Book, besides a considerable array of laws bearing indirectly upon the subject, it must necessarily enter into some detail, without which it would be difficult if not impossible to arrive at a proper conclusion on the real relation of the State with the fisheries.

"Protective"
legislation.

Magna Charta
and the
fisheries.

To the first or "protective" order of legislation belongs the celebrated enactment in Magna Charta, as afterwards ratified and confirmed by Henry III., that "all weirs from henceforth shall be utterly put down by Thames and Medway, and throughout all England, except by the sea-coast." This statute was, however, only incidentally a "fishery" statute. Its primary object was the protection of navigation interests; but it incidentally involved an important point in salmon-fishery legislation, which later experience has served to enforce. In stipulating that "kiddels" or fishing weirs should be put down in navigable rivers, as being an obstruction to navigation, the barons conferred a great benefit on the salmon-fisheries, in so far that the same structures which were an obstacle to navigation were a serious obstacle to the ingress of salmon. As just stated, the motive which prompted this clause in the Great Charter was not so much the protection of salmon as the preservation of a free passage for vessels. Navigation interests were paramount; but at the same time they were allied to fishery interests, and the removal of an obstacle to navigation was the removal of a destructive fishing

engine of a kind which, more than six hundred years later, Parliament passed an Act to abolish, as completely as equity would allow, solely in the interests of the fisheries.

At the same time this "wear" clause in the Charter involved a principle which a previous clause had more distinctly specified, and which may be conveniently referred to here as showing the important rights that are at stake in the relations of the State towards fisheries and fishermen—viz. the question of the public right of fishing.

The "kidelli" were the outward and visible sign of the encroachment of private rights upon public liberties. The Crown, since the Norman Conquest, had introduced the principle that all land was its property, as distinguished from that of the community; and this principle was being rapidly extended, both in theory and practice, to the rivers. Just as the Crown had granted away forfeited lands, so it was beginning to make grants of waters with their rights of fishing, &c.; and the grantees were in the habit of setting up fishing-weirs in the exercise of their newly-acquired right. These weirs, as has been seen, were a serious obstacle to navigation, and, while insisting on their removal in navigable rivers, the barons at Runnymede also stipulated that no further appropriation of public waters should be permitted. Hence the provision in Henry III.'s confirmation of Magna Charta that "*nulla riparia de cetero defendantur nisi illa quæ fuerunt in defenso tempore Henrici regis avi nostri, per eadem loca et eosdem terminos sicut esse consueverunt tempore suo.*"

Thus the distinction between the public and private rights of fishing was recognised, which has ever since been observed in English fishery legislation, and which has guided the State in its relation with the fisheries to such an extent that, while the prohibition of fixed engines for the

Public *versus*
Private Rights.

capture of salmon does not extend to fixed engines which are private property, and the right to which, dating from time immemorial, or originating in a Royal grant or charter, was exercised between the years 1857 and 1861, yet such prohibition does extend to the public user of such fixed engines, however long the public may have used them.

Alliance of
navigation
with fishery
interests.

A succession of statutes, down to the time of Henry VIII., reiterated the prohibition of weirs and similar obstacles to navigation which Magna Charta had pronounced, and by degrees the interests of the fisheries—not only of the salmon fisheries, but of other fisheries as well—came to take equal rank with those of navigation in the demand for the suppression of these engines. The Act 4 Henry IV. c. 11 enforced the statutes against “weirs, stakes, and kidels,” not only on the ground that they were an obstruction to navigation, “much people being perished”—no doubt owing to collisions with the obstacles—but because “also the young fry of fish” were “destroyed, and against reason wasted and given to swine to eat.” By 2 Henry VI. c. 15, again “the standing of nets and engines, called trinks, and all other nets fastened to great posts, boats, and anchors” was prohibited, on the ground, first, of the “destruction of the brood and fry of fish;” and, second, of obstruction to navigation; while 12 Edw. II. c. 7, in reciting “the laudable statute of Magna Charta,” actually goes so far as to attribute its prohibition of kidels to a desire not only to preserve the navigation, but to provide a “safeguard of all the fry of fish.” What authority there was for attributing to the framers of Magna Charta an intention which they did not claim themselves, and which no previous Acts confirming the Charter had seen fit to credit them with, is not clear. But the claim is interesting

as showing the increasing importance which was being attached to the fisheries.

In the meanwhile, restrictive or protective legislation in regard to the fisheries was taking many different directions, and becoming more and more stringent. Besides prohibiting the use of certain instruments, it limited, at different times, and in regard to different kinds of fish, the period during which fish can be legally caught; it restricted the size or the mesh of nets; it forbade the capture of fry; or the destruction of spawn, or the killing of spawning fish; and it fixed a standard size under which fish might not be caught or sold. At first salmon, and eventually all kinds of fish, received the special attention of the Legislature, not merely as an incident in the maintenance of navigation, but on account of the growing importance of the fisheries as a source of food supply, and apparently of the diminishing yield of certain kinds of fish. So early as 1283, 13 Edw. I., Stat. I. c. 47, fixed a close time for salmon in the Tees and the rivers flowing into the Humber, from "the Nativity of our Lady unto St. Martin's Day;" and the same statute prohibited the capture of "*salmunculi*" (smolts), "from the midst of April unto the Nativity of St. John Baptist." "Conservatores" were appointed to enforce this law, and subsequent Acts enlarged their powers, these officers being thus the direct forerunners of the Boards of Conservators appointed under the Salmon Fishery Acts of the present day. The Act 13 Rich. II., c. 19, established a close season for salmon in the rivers of Lancashire, from "Michaelmas Day to the Purification of our Lady," and prohibited at all times of the year "any nets, called stalkers, and other nets or engines, whatsoever they be, by the which the fry or the brood of salmon, lampreys, or any other fish may in any wise be taken or destroyed."

Extension of
"protective"
legislation.

Preservation
of salmon.

Close time.

Salmon and
other fisheries
in the
Thames.

Many similar enactments followed, some with a general application to the whole country and all kinds of fish, others limited to particular rivers or localities on the sea-coast and to certain specified fish, especially salmon and eels. Of these the most interesting are those relating to the Thames, since they not only show the increasing importance which was attached to the fisheries of the metropolitan river as London grew in population, but they also afford clear evidence that the citizens, having, by the wisdom of their ancestors, freed the navigation, were endeavouring to improve the fisheries, now become their principal anxiety. In 1394 the "Mayor of London" was (by 17 Rich. II. c. 9) entrusted with special powers to enforce, in the Thames, the laws "touching salmon," and less than a hundred years afterwards (by 4 Hen. VII. c. 15, 1489) he was made the principal conservator of the Thames, with authority to check the destruction of "fry and brood of fish," which were taken "in great multitudes for bait, and also for the feeding of hogs." These Acts were the origin of the large powers still exercised by the Thames Conservators, to whom, by subsequent enactments, the powers of the Lord Mayor and Corporation in this behalf were transferred. The navigation interest, however—no longer friendly, but, in the construction of weirs, inimical, to at least the salmon fisheries,—has, with the aid of pollutions, exterminated the salmon from the Thames, and the duties of the Thames Conservancy Board, in regard to the fisheries, are chiefly confined to the protection of the interests of anglers for trout and coarse fish in the upper waters. A close season for salmon is still included among the byelaws of the Board, but London sewage and navigation weirs have made a "close season" in the Thames all the year round, not only for salmon fishers, but for the salmon themselves. Nothing could

more forcibly illustrate the change which has taken place in the condition of the fisheries of the Thames since the period when the Lord Mayor was first called upon to preserve the fry of salmon and all kinds of fish, unless it be the fact that the principal fishing industry carried on in the Thames is the capture of young sprats, and of the "brood of sea-fish," under the name of whitebait. The extermination of salmon in the Thames illustrates a point in the relation of the State towards the fisheries, which will be referred to later on.

The Act 1 Eliz. c. 17 went a step further than any of its predecessors. After reciting that the "spawn, fry, and young brood of eels, salmons, pikes, and of all other fish, hath been much destroyed . . . insomuch that in divers places they feed swine and dogs with the fry and spawn of fish, and otherwise, lamentable and horrible to be reported, destroy the same," it prohibited the taking or killing of fry of any kind "in any straits, streams, brooks, rivers, fresh or salt, within this realm;" it fixed a minimum size for pike, salmon, trout, and barbel; and it prohibited the use of nets with a mesh less than "two inches and a half broad," except for smelts and other small fish.

Preservation
of sea fish.

Fry and
young fish.

A yet further advance in protective legislation was made by the Act 3 Jas. I. c. 12, which (1) forbade the erection of "weirs along the seashore, or in any haven, harbour, or creek, or within five miles of the mouth of any haven or creek;" (2) prohibited generally the capture of the fry, spawn, or brood of sea fish of any kind; and (3) directed that no "draw-net or drag-net under three inches mesh, viz., one inch and a half from knot to knot," should be used within five miles of the mouth of any haven or creek. The Act 1 Geo. I. Stat. 2, c. 18, extended this last provision by prohibiting the "use at sea upon the coast of England"

Mesh of nets.

of "any traul-net, drag-net, or set-net whatsoever, for the catching of any kind of sea fish (except herrings, pilchards, sprats, or lavidnian), which hath any mesh or moke of less size than three inches and a half at least from knot to knot, or which hath any false or double bottom cod or pouch." It also established a standard of size for certain specified kinds of fish, under which no such fish were to be sold. In view of the recent agitation for fresh legislation of this kind, it may be useful to quote the minimum sizes so fixed:—

Sale of small fish.

Turbot	16 inches
Brill	14 "
Codlin, bass, and mullet	12 "
Sole and dab, or "place"	8 "
Flounder	7 "
Whiting.	6 "

The measurements in each case were to be taken from the eye to the utmost extent of the tail.*

Necessity for modifications of law.

These limitations of size, however, gave rise to a fresh complication, which a new Act (22 Geo. II. c. 49) was required to remove. It was found that, as this Act expressed it, "several of the said fish are taken with a hook, and, though" (being undersized) "thrown again into the sea, cannot be preserved alive;" and so the prohibition of the sale of undersized fish was removed, "provided such fish are taken with a hook, and so not fit or capable of being preserved alive." But this relaxation of the law was taken advantage of to send to the market "undersized fish, though not taken with an hook;" and Parliament finding, as it confesses in 29 Geo. II. c. 39, that "such liberty hath not been attended with such good effects as was expected,

* To this list 33 Geo. II. c. 27 added smelts under 5 inches from the nose to the utmost extent of the tail.

for that the markets being supplied with such smaller fish doth enhance the price of the largest sort" (though it is not easy to see the force of this reasoning), repealed the provision allowing undersized hook fish. But the question was not settled yet. Only four years later the fact was again pressed upon the Legislature that undersized turbot and brill "are often taken in the sea with an hook, and if thrown again into the sea it is uncertain whether such thereof as have swallowed the hook will afterwards live or not." So the prohibition of the sale of fish below the standard size was again removed in the case of these two species. But Parliament, recollecting that a similar privilege had, on a former occasion, militated against its express efforts at keeping down the price of fish, now added the proviso that undersized turbot and brill should not be sold at a higher price than 6*d.* per lb. It forgot, however, that if anything was likely to "enhance the price of the largest sort," it was the policy of fixing a very low price for the undersized fish. The intention, no doubt, was to remove the inducement which the permission to sell undersized fish, provided they were "hook fish," offered to the fishermen to keep the undersized fish caught in their nets, and expose them for sale when by no possibility could the fact of their not having been caught by hook be proved against them.

This complication, which Parliament had brought about, and from which it was unable to extricate itself without a total repeal of all its enactments or a simple prohibition of undersized fish, regardless of the fate of the unfortunate fish cast back into the sea to digest a dinner of fish-hooks, was partly caused by the belief which the public entertained that there was no reason for the high price of fish, except a deliberate arrangement on the part of the trade to

Difficulties in
enforcement
of the law.

Belief in trade
combinations
to increase
the price of
fish.

limit its supply and so control the markets. This belief was shared by the Legislature, and protective legislation was so directly influenced by it that, although the subject does not belong strictly to the question of "protection," it may conveniently be discussed here. The increased supply of fish—and consequently its increased cheapness—were the objects which the Legislature had in view in its protective measures. Its object was the same when it saw, or fancied it saw, a trade combination to frustrate its intention by deliberately keeping back the supply, or enhancing the price, of the very fish which the protective laws were supposed to have called into existence.

Early
instances.

This question is at the present moment exercising the minds of the public ; and the existence of a "Billingsgate ring" is, rightly or wrongly, as firmly believed in, in many quarters, as the admitted existence of "cotton corners" or "wheat corners" in the United States. But the "Billingsgate ring" is no new nineteenth-century idea. More than five hundred years ago the Commons "complained them to our Lord the King, because that the people of Great Yarmouth do encounter the fishers bringing the herring to the said town in the time of the fair, and do buy and forestall the herring before they do come to the town, and also the hostellers of the same town that lodge the fishers coming thither with their herring will not suffer the said fishers to sell their said herring, nor meddle with the sale thereof, but sell them at their own will as dear as they will, and give to the fishers that pleaseth them . . . and so is the herring set at much greater price than ever it was, to the great damage of our Lord the King, of the lords, and of all the people." On this ground an Act of Parliament was passed in 1357 (31 Edw. III. Stat. 2, c. 1), enacting "that no herring be bought or sold in [*i.e.* on] the sea till

the fishers be come into the haven with their herring, and that the cable of the ship be drawn to the land."

This Act was not new in principle, since a general statute (25 Edw. III. Stat. 4, c. 3) already existed, imposing pains and penalties on "the forestallers of wines and all other victuals, wares, and merchandise that come to the good towns of England by land or by water." It merely applied a recognised principle with exceptional distinctness to a particular industry, and with especial reference to a particular locality. The measure was, no doubt, justified by the peculiar circumstances of the time, when it was in the power of a few powerful nobles to monopolise the trade of the country and make their own terms with the "people." The provisions against "forestallers," indeed, increased in severity in succeeding reigns, and formed part of the law of the land until they were swept away by 7 & 8 Vict. c. 34, in 1844.

The Act of 31 Edw. III. was followed by another with still more stringent provisions for keeping down the price of fish, and for breaking down the operations of what would be called in America, at the present day, the herring "corner." Among other things it was provided that "no vessel called pyker of London, nor of none other place," should enter the haven "to enhance the fair in damage of the people," although these pykers were allowed to "freely buy fresh herring in Kyrkly and elsewhere upon the coasts of the sea, without impeachment or disturbance of the hostellers of Yarmouth or of any other." It was further enacted that the fishers should "be free to sell their herring to all that come to the fair of Great Yarmouth without any disturbance of their hostellers or any other;" that the fishermen should sell their "merchandises openly," and in "the presence of other merchants;" that all sales of fish

State regulation of trade.

should be "made from the sun rising till the sun going down, and not before nor after, upon forfeiture of the same merchandises;" and that "no hostellers, nor any of their servants, nor any other whatsoever he be coming to the said fair shall go by land nor by sea to forestal herring privily nor openly." Finally, this law ordained that the maximum price at which herrings should be sold should be 40s. per last, two lasts of "shotten herring" being sold for the price of one last of full herring, and red herring being sold at half a mark profit per last.

Survival of
old customs.

As an instance of the survival of old customs in the fishing trade, it may be mentioned that the existing method of counting six score of fish to the hundred originated in an enactment of this Act of Edward III. which directed that "the hundred of herring shall be accounted by six score, and the last by the thousand."

The very next statute in the Statute Book aims at reducing the price of salt fish brought in vessels "pertaining to the haven of Blakeneye and coasts thereunto adjoining," and orders that such ships shall "discharge their fish within the haven of Blakeneye only;" that "no fish be delivered out of the ship before that the owner and the merchant be agreed of the price of the same by clear day;" and that "by the advice of the merchants and buyers of the owners coming to the fair of Blakeneye, and of the owners of the ships, a price shall be set at the beginning, and assessed upon the dogger fish and loych fish before that any sale be made, which price shall be holden during the fair, and the said fish be sold at such a price openly."

Effect of
State inter-
ference with
trade.

These enactments were intended to reduce the price of fish. They probably had the opposite effect; and Parliament itself seems to have had some misgivings about the success of its attempts at regulating the market, and

evidently feared than the hostellers of Yarmouth would retaliate by refusing to accommodate fishermen, or merchants, or both; and that the fishers and mariners of Blakeneye would "leave or refuse to go in fishing," as a protest against interference with the customs of their trade. At any rate, "hostellers" and "fishers" were especially warned not to be "resistant in any point against" these two statutes respectively. As an inducement to both classes to observe the law, certain concessions were made to each, the most important being an enactment that no one was to "buy nets, hooks, nor other instruments pertaining to fishing in the county of Norfolk, but owners, masters, and mariners of ships that use the mystery of fishing, and which have to do with such things"—the object being apparently to reduce the price of fishing gear as well as of fish.

Experience proved that the remedy, in the case of Yarmouth at least, was worse than the disease, and in 1360 we find a fresh Act passed on the subject of the Yarmouth herring fair, which swept away the greater part of the law made only three years before. A petition was now presented to Parliament, setting forth "that the sale of herring is much decayed and the people greatly damaged by the points" insisted on in the previous statute; that "many merchants coming to the fair, as well labourers and servants as other, do bargain for herring, and every one of them by malice and envy increase upon other and if one proffer forty shillings another will proffer (*sic*) ten shillings more, and the third sixty shillings, and so everyone surmounteth other in the bargain, and such proffers extend to more than the price of the herring upon which the fishers proffered it to sell at the beginning"; that the fishermen, being obliged to look to several buyers for payment, instead of receiving a lump sum for their fish from one of the much-abused

"hostelers," are "so much grieved and delayed in the gathering of their money, that they should demand of so many persons, that they lose their mart (tide) and the advantage of their calling"; and that the enactment that all fish should be sold between sunrise and sunset was "to the great loss of fishers and appairing of the herring and damage of the people that shall buy the same; for the fishing is more by night than by day, and often it chanceth that the fishers be so long and so charged that they come to the town after sun going down, or little before, so that they cannot sell their herring in the time for the sale limited, so that they must abide all the night and the day after upon the sale of their herring, and so lose many marts (tides) and the profits of their fishing." Parliament, perceiving all these "mischiefs and grievances," repealed the provisions of the Act which had led to them, and, while still insisting that herrings should be sold "openly and not privily," ordained that the price should be agreed upon between buyer and seller, providing, however, that "no man enter in bargain upon buying of the same till he that first cometh to bargain shall have an end of his bargain agreeable to the seller, and that none increase upon other during the first bargain upon pain of forfeiture to us the double of his proffer."

The law
modified.

Thus Parliament in its well-meant, but ill-judged, efforts to stand between buyer and seller, between producer and consumer, over-reached itself, and we do not hear much more of the machinations of "forestallers" and their like till the reign of Henry VIII., when the buying of fish for resale at Sturbridge, St. Ives, and Ely was forbidden. This law, however, lasted only ten years. An Act of Edward VI. (5 & 6 Edw. VI. c. 14) gave fresh sanction to the old laws against "forestallers," and defined and prohibited

cognate offences under the names of "regrating" and "ingrossing." Foretallers were defined as persons buying beforehand or dissuading traders from bringing merchandise (fish being specially included) home. Regrators were defined as persons buying in any market and selling within four miles. Ingrossers were defined as persons getting by buying, or getting other than by demise, to sell again. All persons doing such acts were liable to heavy penalties. But these provisions were incompatible with the newly-awakened desire to encourage foreign trade; and, while their object was to keep down prices, the effect of other laws prohibiting imports in foreign ships was to enhance prices. Consequently, we find the Act of Edward VI. repealed by 13 Eliz. c. 11, "for so much of the said sea fish, &c., as any buyer or buyers upon the sea by way of forestalling or regrating shall and do bring and discharge" in any English subject's ships "in any port or haven in this realm."

"Fore-
stallers,"
"regrators,"
and "in-
grossers."

Effect of laws
regulating
sale on trade
generally.

After this there are few Acts of Parliament dealing with the "Ring" question and the proceedings of forestallers and regrators till the 10 & 11 Wm. III. c. 24, which made Billingsgate a "free and open market for all sorts of fish whatsoever." The preamble of this Act recites that "divers abuses, evidently destructive" to the fish trade, "have been of late years practised, by raising new impositions and tolls, and by forestalling of the markets and other methods used by the fishmongers, in not permitting the fisherwomen and others to buy fish . . . of the . . . fishermen to sell them again in London and elsewhere, by which means the fishermen are obliged to sell their fish to the said fishmongers at their own rates, to the great discouragement of the said fishermen"; and that "of late years an evil practice hath been used by the fishmongers in employing

Renewed
attempts to
regulate trade
in fish.

one or two persons at the most to buy up all or the greatest part of the fish which is brought to the said market . . . and afterwards dividing the same amongst the fishmongers by lots, by reason whereof the fishmongers buy and sell at what rates they please." It is consequently enacted that "no such practices shall be at any time hereafter used or allowed"; and that any person buying any quantity of fish at Billingsgate to be divided among other persons and afterwards retailed, and any fishmonger "ingrossing" any quantity of fish except for his own use or sale, should be liable to a penalty of £20.

Subsequent acts increased the stringency of these provisions. 9 Anne cap. 26, in its zeal for the prevention of "regrating, forestalling and engrossing," by the sale of fish "at unseasonable hours in the market of Billingsgate," enacted that no fish should be sold before 3 A.M. from Lady Day to Michaelmas, or before 5 A.M. from Michaelmas to Lady Day. By 22 Geo. II. c. 49, interference with "freedom of contract" was carried still further, all contracts between fishermen and fishmongers for the buying and selling of fish "to be sold again by retail before such fish shall be brought to an open market" being declared void, with the provision that one party to such a contract might inform against the other, and that all bonds for not suing for any penalty under the Act should be of no effect. Besides this, a special clause was enacted to prevent fishermen and others from bringing their fish to some place in the "River of Thames, and there keeping it for a considerable time and sending only small quantities from time to time to market with a view to keep up the price of the several species of fish . . . which practice will not only tend to enhance the value of fish, but also to render it unwholesome food, to the great prejudice of the consumer as well as

the fishery in general." And the heavy penalty of forfeiture of boat and cargo was imposed upon all persons keeping "any fish at Queenborough, Gravesend, or other place or places in any well-boat, store-boat, or any other manner whatsoever, so as not to sell off their whole cargoe of fish within the space of eight days from their arrival on the British coast between North Yarmouth and Dover."

The impracticability of this enactment was admitted in an Act passed in 1756 (29 Geo. II. c. 39), the preamble of which, after reciting that "many difficulties have arose (*sic*) in putting the said Act in execution which . . . hath (*sic*) rendered ineffectual the other good purposes of the said Act, and more particularly the preventing the forestalling and monopolising of fish in general," goes on to admit that the winds and waves would not obey an Act of Parliament in the time of George II. any more than the tide would retreat at the command of a King in the time of Canute; and, as it was found to be often impossible for vessels to reach Gravesend or Queenborough within eight days of their arrival off Yarmouth or Dover, owing to "the common accidents of wind and weather," the eight days' interval was ordered to be reckoned from the time of their arrival at the Nore, which they were required to report to the searcher at Gravesend. This arrangement was often found, however, in practice to involve the loss of a tide, and a fresh Act (33 Geo. II. c. 27) was required to enable vessels, within three days of their arrival at the Nore, to report themselves at the Custom House in London. Meanwhile, however, they were subject to the most vigilant inspection of officers appointed for the express purpose of seeing that they did not part with any of their cargo before reaching Billingsgate, and they were even prohibited from depositing fish, under any circumstances, in store-boats or well-vessels.

Impracticability of law.

The eight days' interval, however, between the arrival at the Nore and discharge of cargo was extended in the case of lobsters to twelve days, and of live eels to twenty-eight days.

In other respects the conditions of sale were made much more stringent. It was enacted, among other things, in two or three successive Acts, that a list containing a full account of all the fish offered for sale should be displayed over every stall to which they were brought from the vessel ; that no more than a certain specified and limited number of fish of each sort should be offered in one lot ; that they should not be sold twice in the same market, or within 150 yards, in one day : and so on.

Introduction
of fish
machines.

In 1762 the use of "fish machines," or vehicles adapted specially for the land carriage of fish, was introduced, and Parliament at once afforded these conveyances special privileges, in the exemption from tolls, when returning empty, and from certain other highway regulations. The introduction of these "machines" did more to increase the supply of fish than all the Acts of Parliament for the suppression of "regrators" and "forestallers ;" and forty years afterwards an Act of Parliament was passed declaring that the amount of fish brought to Billingsgate had so much increased that it was desirable to amend the law restricting the quantities of fish to be sold in one lot, and the number of each kind of fish that might legally be offered for sale at a single bid was consequently largely increased. With the still growing trade these restrictions, however, became more and more irksome, and they were ultimately removed by the Billingsgate Act of 1846, which swept away the last remaining vestiges of Parliamentary interference with the course and customs of the fish trade.

Growth of
fish trade.

Abolition of
restrictions.

The revolution which fish "machines" had created in the

fish trade was extended by the growth and expansion of the railway system, and Billingsgate, instead of being dependent on the river as the sole channel through which it receives its supplies, or on the laborious efforts of horse vehicles, now receives more than twice as much fish by rail as by river. Out of about 120,000 tons of fish brought to the great Metropolitan Fish Market in 1880 about 38,000 tons came by water and 82,000 tons by land.

Railways and
the fish trade.

Extent of
Billingsgate
trade.

If the history of Billingsgate Market is instructive, that of the "Free Market for the sale of fish in the City of Westminster," the existence of which a series of Acts of Parliament regarded as a fact, although it never had any existence at all, is perhaps more so, in considering the relations of the State towards the fishing industry generally. An Act passed in 1749 (22 Geo. II. c. 49) directed that "from and after the 24th day of June, 1749, there shall be a free and open market in the City of Westminster for all sorts of fish whatsoever: and to the end the said market may be erected" trustees were appointed to construct the market on the river bank adjoining Westminster Bridge. But the "free and open market" was subject, by the same Act which authorised its existence, to all the limitations which the laws previously quoted had imposed on the trade generally. Whether from this cause, or from the action of the "Billingsgate ring," or what not, the market never had an actual, although it had a legal, existence, and was referred to in several subsequent Acts as if it had actually been constructed. Instead of erecting a market as directed, the trustees allowed one Richard Hughes to build on the authorised site eight houses, "with conveniences fit for the fishmonger to sell by retail," "for the greater accommodation of the inhabitants of Westminster in resorting to the said market;" but the conditions of the lease restrained the

History of
"West-
minster"
market.

letting of these "houses to any other than fishmongers," and as any fishmongers who might settle there ran the risk of incurring "the penalties against regrators, should they expose to sale again in their shops any fish bought by them at or in the said fish market," it is little wonder that "several of the houses were uninhabited," and that "great loss accrued to the said Richard Hughes thereby." As a means of escape from this dilemma, Parliament allowed the trustees to relieve their lessee of his covenant in regard to two houses, and gave leave to any fishmongers, holding shops for the sale of fish in any of the others, to sell any fish whatever there "although they shall have bought the same in the said market at Westminster." Still setting its heart on the actual erection of this building, Parliament next ordered that no one should sell fish within 500 yards of the site without the licence of the trustees, and even authorised them to compensate one fishmonger who had established himself in Bridge Street for this interference with his business. But neither the fish nor the market came to Westminster, and, after a struggle of over forty years, Parliament in 1790 relieved the trustees of their trust, and, on the pretext that "the providing of apprentices for fishermen was one of the objects" of the original Westminster Market Act, handed over their funds to the Marine Society.

The history of the Hungerford and Columbia fish markets, founded under the *régime* of freedom from State interference, shows that there was something more than Parliament was able to see that prevented the success of its attempts at market-making. The present phase of the question which the new markets at Shadwell and Farringdon illustrate is an interesting subject for study. Its bearing on the problem of the duty of the State towards this branch of the fisheries

question seems to tend towards enforcing the doctrine that the State should only interfere to give the greatest possible freedom to trade, and to afford the fullest facilities for the erection and maintenance of markets, without unnecessary expense or delay, wherever the exigencies of the trade may require.

Throughout its incessant enactments, repeals, revivals, and modifications of the law, the intentions of the Legislature were not open to question; but the information on which it acted was incorrect, and its reasoning often unsound. When it came to a question of a knowledge of the habits of fish the law makers were out of their depth altogether. The close season for salmon, from the beginning of September to the beginning of November, which the Act of 13 Edw. I. fixed for the rivers of Yorkshire, certainly ended too early if it did not begin too early; but by 4 & 5 Anne c. 21 this close season was applied to the rivers of Hants and Wilts, to whose circumstances it was no better adapted than to those of the northern rivers. But what shall be said of the Act of Geo. I. (1 Geo. I. c. 18) which repealed these provisions in order to make the close season, in Wiltshire and Hampshire, from August 1st to November 12th? It is no wonder that, as 37 Geo. III. c. 95 expresses it, this enactment was "found very prejudicial to the owners and proprietors of the fisheries in the said counties," and that "further provision was necessary for the better preservation of the salmon kind in the rivers within the said counties." This time the close season was made to correspond more nearly with the spawning season, being fixed from September 12th to January 1st.

Freedom of trade.

Necessity for knowledge of Natural History in Fishery legislation.

Insufficiency of early close times for salmon.

An Act of Richard II., which fixed the close season in Lancashire so as to embrace the more reasonable period between Michaelmas and the beginning of February, suffered

still worse treatment at the hands of the framers of 1 Geo. I. c. 18 ; for this statute fixed the close time for salmon in nearly all the northern rivers, including those of Lancashire, from the last day of July to the twelfth day of November "for ever." In the case of the Ribble, at least, "for ever" was reduced in practice to thirty-six years ; and 23 Geo. II. cap. 26, after reciting that the close season so fixed "hath been found inconvenient, as to the River Ribble, by reason that the time limited for restraining the taking fish therein is not properly suited or adapted to the fishing seasons there," makes the close time extend from September 14th to January 2nd, "for ever." Many other instances of legislation on insufficient information might be given. Gaining wisdom by experience, and finding that its enactments as to close time still "proved ineffectual," Parliament, in 58 Geo. III. c. 43, adopted the principle, which was extended by 6 & 7 Vict. c. 33, of making the justices the judges of the requirements of their own rivers, and of authorising them to fix the close time for salmon. But even then abuses crept in ; and it finally established a universal close season for all English and Welsh rivers, leaving it to local Boards of Conservators, whose formation it authorised, to alter that close season, within certain limits, if found desirable, with the sanction of a central authority (the Home Office), and generally to enforce the law and adapt it, in certain *minutiæ*, to their own requirements.

Adoption of
uniformity.

Local
authorities.

Conflict of
navigation
and fishery
interests.

By this time, however, other matters besides the fixing of a suitable close season had claimed, and were more and more urgently pressing their claims upon, the attention of the State in the question of salmon preservation. In the first place a great change had come over the relation of the fisheries to the navigation interest. The introduction of pound locks into canals, by Brindley, was followed by the

application of these contrivances to river navigation, and many streams which had hitherto been free from obstructions of this kind were invaded. The navigation interest, which had hitherto demanded the removal of fishing weirs, and which had thus been such a powerful ally of the fishing interests, now encouraged the construction of still more serious obstacles to the ascent of fish. But this was not all. Not merely did the new locks present almost insuperable obstructions to the ascending salmon, but they changed the character of many rivers, transforming their natural reaches of rapid running water into a succession of comparatively stagnant pools. Thus was laid the foundation of the real scarcity of salmon which, first experienced towards the end of the last century, was more and more severely felt as the nineteenth century grew old. The frequent abstraction of water from the rivers for the purpose of feeding the numerous canals, into the construction of which the whole energies of the country were thrown, was another incident in the revival of navigation interests which added still further to the difficulties of the salmon. The growing manufacturing activity of the country,* with the consequent pollution of the rivers, was a fresh source of mischief. In 1804, and again in 1818, legislative notice of this was taken in an Act forbidding, among other things, the pouring into rivers of water "in which any green lint or flax has been steeped, or any water impregnated with any material or drug pernicious to fish:" but the manufacturing industries soon outran this modest enactment, while the introduction of deep drainage for agricultural purposes, and of systems of town sewerage, still further tended to complete the

Neglect of
fisheries by
other
industries.

* In 1804 an Act regulating the Solway fisheries, specially exempted weirs built in connection with iron forges from the prohibition against dams in salmon rivers.

threatened extermination of the salmon. All these new complications, added to the survival of ancient difficulties, represented a formidable array of important interests, conflicting at every turn with those of the fisheries, with which the new Boards of Conservators had, and still have, to devise means of reconciling them.

Duties of the
State.

To provide the machinery for reconciling the conflicting interests of fisheries, navigation, mines, mills, manufactories, drainage of land and towns, and water supply was obviously the duty of the State. It was impossible to act on the principle of letting the "weakest go to the wall;" but it was equally impossible to allow that, because the weakest was deserving of State protection, it should claim protection to the unreasonable disadvantage of a stronger and more important neighbour. Powers have consequently been given to the Conservators of the salmon fisheries to protect the interests of those fisheries in various directions—from the removal or remedying of weirs and the prevention of pollutions down to the adjustment of hereditary disputes between pike and salmon smolts.

Principles of
existing
salmon laws.

That the principle is sound by which the existing relations of the State towards the salmon fisheries are regulated, can hardly be open to question. Whether the principle is carried, in practice, to its full extent—whether, for example, greater powers might not be given to abate pollutions and weirs—is a question well worthy of discussion, but one which can hardly be adequately treated here.

The misfortune is that in all the legislation which took place—and in that which did not take place—down to the commencement of the present century, the State allowed its attention to be directed to one predominating subject, or to one feature of the subject, to the exclusion of all others; and also that when it did act its action was often based on

insufficient, if not absolutely incorrect, information. If, for instance, when the rivers were being blocked by pound locks, provision had been made for facilitating the ascent of salmon, the Thames would, in all probability, have been stocked with salmon to this day. This would almost certainly have been the case if, in another fit of obliviousness of fishery interests—and of hygienic and other interests too—the State had not omitted to prevent, before Prescriptive Rights stood in the way, the inordinate pollution of rivers. Even now, if that giant among polluting agencies, the Metropolitan sewage system, could be removed, the day might yet return when salmon fishermen should ply their nets within sight of the Houses of Parliament, and under the shadow of that Church of St. Peter which, according to the old legend, was endowed by the great Apostle himself with a tithe of the salmon fisheries of the river on whose banks it stands.

The example
of the
Thames.

When the apprehensions of the Legislature for the future of the salmon fisheries, in consequence of its forgetfulness, was really aroused, it took the course which it had never before adopted, or adopted to little purpose, and directed the most exhaustive enquiry into the history and prospects of the fisheries. On the result of that enquiry, and on the ashes of the old laws, the existing Acts were passed, and a similarly exhaustive enquiry has preceded every modification of the first of the series. It is needless to follow, in equal detail, the development of the Scotch and Irish laws relating to salmon, as their administration is guided by principles similar to those which direct the English laws on the subject. Sufficient has been said to show the growth of this one branch of fishery legislation—viz. that of inland or freshwater fisheries—and we may resume the consideration of the other branch, that relating to the sea fisheries.

The sea
fisheries.

Early ignorance
concerning them.

If, in so comparatively simple a matter as the observation of the habits of a fish like the salmon, passing a considerable period of its existence within the narrow limits of the head-waters of our rivers, Parliament was led so far astray as to fix, for example, a close season during one of the best portions of the fishing season, it is not to be wondered at that its knowledge of the natural history of purely sea fish was of the most limited extent. One Act (3 Jas. I. c. 12) prefaced its enactments as to the destruction of the spawn and fry of sea fish by very gravely asserting that "it is certainly known by daily experience that the brood of sea fish is spawned and lieth in still waters, where it may have rest to receive nourishment and grow to perfection." This contribution to natural history may be matched by another afforded by 9 Geo. II. c. 33, which states that "lobsters crawl close to shore to leave their spawn in the chinks of the rocks, and as much under the influence of the sun as possible," and, upon that premise, proceeds to fix a close time for lobsters from June 1st to September 1st. Parliament was much wiser when, in providing in a previous Act (10 & 11 Wm. IV. c. 24) that no lobsters should be brought ashore or sold under "eight inches in length from the peak of the nose unto the end of the middle fin of the tail," it hazarded no doubtful statements as to the domestic economy of the lobster. It is not a little curious that this provision, after having ceased to be observed, and having apparently been forgotten, was revived in the existing Act regulating the capture and sale of lobsters and crabs (40 & 41 Vict. c. 42), and is almost the only provision of the old laws thus re-enacted intact. A different fate, however, befel all the other Acts passed for the protection of purely sea fish. The most important of these, perhaps, were those relating to the herring

fisheries. In 1808 the Act 48 Geo. III. c. 110 directed that no net for the capture of herrings should be used on the coast of Great Britain with a mesh of less than one inch from knot to knot ; but the fact was lost sight of that the herring fisheries and the sprat fisheries are often carried on simultaneously in the same localities ; and as no provision was made for the size of mesh or description of net to be used for sprats, or for prohibiting their capture, it frequently happened that the sprat fishermen in the Firth of Forth caught large quantities of herrings ; and when the Scotch Herring Fishery Board, established by the same Act, seized, under its powers, the nets so taking herrings with an illegal mesh, the sprat fishermen forcibly opposed its officers, and serious riots ensued. Thus the first real effort to enforce the provisions of a "protective" law in regard to the sea fisheries resulted in disorder. Parliament attempted to enforce the law of 1808 by enacting, in 1851, that "whenever the herring fishery is commenced or carried on," no net of any kind, except drift-nets of the legal one-inch mesh, should be used. The sprat fishermen, who used scine-nets and scringe-nets, resented this further interference with their industry, and when, in 1860, the repressive Acts were made more stringent, they so resolutely opposed them that a compromise was made by which they were allowed to fish in a certain part of the Firth.

In the meantime the prohibition of all nets except drift-nets had seriously interfered with the operations of the fishermen in Loch Fyne, who were accustomed to use the "circle-trawl" or scine-net in preference to the drift-net. Although no question of interference with any other branch of the fishing industry existed here, the law was enforced against the circle trawlers, who rebelled against it ; and once more serious riots ensued. These disorders induced the

The herring fisheries.

Law of mesh.

Law of nets.

Government to appoint a Commission of Enquiry, who condemned both restrictions on the fishermen. In the meantime another subject for investigation arose in the result of a law passed in 1860, establishing a close time for herrings on the west coast of Scotland from January 1st to May 31st. The fishermen, deprived of their means of livelihood, suffered the keenest distress during the close time, and did not have the satisfaction of finding that their enforced abstention from fishing had the slightest effect in increasing their subsequent harvest. A second Commission was appointed to investigate these and all other matters connected with the sea fisheries, and reported in favour of the entire abolition of all restrictions. The Sea Fisheries Act, 1868, put these recommendations into force, and the result is, broadly speaking, that the sea fisheries of this country are exempt from all restrictions or protective legislation whatever.

Law of close time.

Enquiry into effect of these laws.

Abolition of restrictions on sea fisheries.

Relative effects of "protection" and absence of restrictions.

Unfortunately there are no general statistics to show whether the fisheries have improved or deteriorated under the new system. But in the returns of the Scotch Herring Fishery Board we have accurate figures, showing the fluctuations, year by year, in the produce of the Scotch herring fisheries; and, as it happens that these fisheries were more closely affected by the "protective" provisions regarding mesh of net and close time than any other fisheries, these returns will afford a very fair criterion of the relative practical effects of protective legislation on the sea fisheries and of its abolition. The following table, taken from the last Report of the Scotch Herring Board, shows the total quantity of herrings, the produce of the Scotch fisheries, cured in each decennial period from 1812 to 1881, both inclusive :—

Ten years ended 1821	.	2,488,961	barrels
" " 1831	.	3,543,799	"
" " 1841	.	4,873,043	"
" " 1851	.	6,070,759	"
" " 1861	.	6,348,528	"
" " 1871	.	7,220,082	"
" " 1881	.	9,434,869	"

In comparing these figures it must be recollected that the mesh-of-net law continued in force from the commencement of the period till the end of 1868 ; that all nets but drift-nets were prohibited from 1852 to 1868 ; that a close time (from January 1st to May 31st) was in force from 1861 to 1868. Also that up to 1868 the Returns included the Isle of Man, and up to 1850 part of England as well.

The good of the people, by the preservation of a valuable property and an important source of food supply, was the ground on which the State based its legislation for the *protection* of the fisheries. The good of the people, by the encouragement of commerce and by providing employment for the poor, was the ostensible motive which prompted the later statutes, whose direct object was the *promotion* of the fisheries. Another motive, indeed, underlay that which was first put forward as the ground for this legislation, and comes more distinctly into notice as the fisheries increased in importance, and as the power of the country extended ; for we find that the Legislature frequently refers to its anxiety to keep up the supply of seamen for manning the navy as a reason for "promoting" the fisheries. "Promotive"
legislation.

The great development of maritime enterprise which England witnessed in the reign of Henry VIII. and his immediate successors encouraged the State in the notion of fostering the fisheries as a "fruitful nursery of able seamen for the public service." In Norway the fisheries were at one time made a direct source of revenue by taxation ; and Interest of
the State in
encouraging
the fisheries.

the Crown, having reserved to itself several valuable fisheries, had been able to raise money by issuing licences to work them. In England, however, the Great Charter had secured to the public the free enjoyment of the public fisheries in the sea and on the sea coast, and the State, far from attempting to restrict public rights, gave the most direct encouragement to the prosecution of the fisheries, relieving their produce from tolls and dues, opening the ports freely to fishing vessels, and even going so far (as in 1 Jas. I. c. 23), as to exempt fishermen and those engaged in the fisheries from liability to an action for trespass if they invaded private property in pursuit of their calling.*

But in adopting the policy of encouraging the fisheries the State was influenced by the hope of receiving an indirect return in the development of trade, and in the education of a race of hardy and experienced seamen, upon whom, in time of need, it could draw for the manning of its fleets. In pursuance of this policy it was led, by regular steps, from the mere interdiction of the import of fish by foreigners, and the imposition of double duties on them, to the prohibition of the purchase of fish from foreigners, even if brought home in English vessels, to the formation and endowment of companies for the prosecution of the fisheries, and, lastly, to the granting of bounties to persons exporting one kind of fish or importing another. But the success which attended the various enactments

Growth of
"bounty"
system.

* In the pilchard fishery it is customary for look-out men to be stationed on the cliffs to watch for the shoals of fish and to direct the movements of the fishing boats. These men are known as condors, huors, directors, or guidors, and by 1 Jas. I. c. 23 they were specially exempt from liability to civil action if, while engaged in this duty, they traversed private property, although they might be at a considerable distance from the actual scene of fishing operations.

made with this object was by no means uniform. Liberty in one direction had to be hedged by restriction in another. Encouragement to fishermen to go abroad had to be followed by penalties on their non-return. Bounties on exportation caused such an impoverishment of the home supply that bounties had to be offered to induce the trade to supply the London markets. The indiscriminate encouragement of the fisheries was often incompatible with the laws made for their protection. On the other hand, the operations of the press-gang among the fishing population so interfered with the industry—the most necessary men being often carried off to man the navy—that first “harpooners,” and then all those engaged in foreign fisheries, had to be exempt for a certain period from impressment, or the industry must have languished.

The history of this phase of fishery legislation proves indeed, as has already been seen in considering the course of protective legislation, how many varied considerations call for notice in dealing with any single branch of the fishery question, and it serves to show how far-reaching, and often how subversive of its original intention, both sweeping and piecemeal legislation on this intricate and complicated question may be.

One of the first Acts of Parliament which may be fairly included in the category of “Promotive Legislation” is 2 & 3 Ed. VI. c. 19, which abolished fast-days, and which is interesting as an example of the extent to which the fisheries and fishery legislation influence, and are influenced by, external and apparently remote causes. The Reformation had just been accomplished, and the people of this country, in throwing off the dominion of the Church of Rome, had abolished many practices originated by its authority. One of these was the observance of fast-days

The Reformation and the fisheries.

when fish took the place of meat. The fishermen, fearing that their "occupation," like Othello's, would be "gone," when religious scruples no longer compelled the people to eat fish, made their voice heard in an Act of Parliament, which, "considering that due and godly abstinence is a mean (*sic*) to virtue, and to subdue men's bodies to the soul and spirit, and considering also specially that fishers and men using the trade of living by fishing in the sea may thereby the rather be set on work," abolished all days of abstinence, in the hope that fish might be more generally eaten, not only on fast-days, but as an every-day diet. This Act, however, seems to have fallen short of its intention, and in Elizabeth's reign (5 Eliz. c. 5) the eating of fish was again enforced on certain days "for increase of the provision of fish, and the more usual and common eating thereof;" and it was particularly pointed out that this enactment was "purposely intended and meant politickly for the increase of mariners and fishermen, and repairing of port towns and navigation, and not for any superstition to be maintained in the choice of meats." This enactment, which was revived at various times, has left its mark upon the present age in the popular use of salt fish on Good Friday.

Restrictions
on foreign
fish.

Incompati-
bility of
different laws.

Repression of foreign competition was the next step in the new policy. Not only were foreigners subject to double duties, but the importation of fish from abroad was forbidden, even if brought in English vessels, unless actually captured by English fishermen. Enactments of this nature were of frequent occurrence from the reign of Henry VIII. down to quite a recent period. But these laws, hastily conceived in one interest, had as often to be repealed in another. One Act, for example (5 Eliz. c. 5), forbade the selling of cod in barrels—partly as a protection of the purchaser against fraud, partly as a preventive of the importa-

tion of foreign fish ; but eight years later another law had to explain that this prohibition was "not meant to hinder any of the Queen's subjects from using uprightness and truth in the barrelling of such fish," and to repeal the prohibition. Yet another Act (23 Eliz. c. 7) again forbade any British subject from bringing or buying salted fish from abroad, and once more Parliament had to admit that it had frustrated its own intentions ; for in a long preamble to 39 Eliz. c. 10 it explains that when the statute just alluded to was passed "it was hoped and expected that the fishermen of this realm would in such earnest have employed themselves to fishing, and to the building and preparing of such store of boats and shipping for that purpose, as that they should long ere this have been able sufficiently to have victualled this realm with salted fish and herrings of their own taking, without any supply of aliens and foreigners, to the great increase of mariners and maintenance of navigation ; notwithstanding it is since found by experience that the navigation of the land is no whit bettered by the means of that Act . . . but contrariwise the natural subjects of this realm not being able to furnish the tenth part of the same with salted fish of their own taking, the chief provision and victualling thereof with fish and herrings hath, ever since the making of the same statute, been in the power and disposition of aliens and strangers, who thereby have much enriched themselves . . . and (taking advantage of the times) have extremely enhanced the price of that victual . . . and yet do serve the markets here in very evil sort by little and little, housing and keeping their fish as well on this side as beyond the sea till the prices be raised to their liking . . . and the navigation of this realm, which was intended to be augmented, hath been rather impaired than increased

Results of
restraints on
foreign
imports.

thereby, and the prices of fish greatly enhanced . . . And for that it is very unequal that the native subjects of this land should not be at liberty to bring in also foreign provision of fish for the victualling of this our country as well as to carry out, but that the stranger should be wholly trusted therewith" — the previous statute is repealed, "every clause, branch, and proviso thereof . . . to all intents, constructions, and purposes, as if the same had never been had ne (*sic*) made."

Nevertheless, just a hundred years afterwards almost exactly the same experience had to be bought at the same cost. The Act 10 & 11 Wm. III. c. 24 prohibited the importation of fish in "foreign bottoms;" but in the first year of King George I.'s reign (c. 18) the importation of foreign lobsters and turbot was permitted, because the previous prohibition had made these fish "much dearer than before." Still the demand for foreign fish caused the law to be disobeyed, and by 9 Geo. II. c. 33 the penalty was increased to £100; yet the contraband trade continued, and as even that heavy penalty was "insufficient to restrain ill-disposed persons from buying and receiving fresh fish other than turbot (*sic*) and lobsters from foreigners;" a fresh Act (26 Geo. III. c. 81) still further increased it, and gave additional powers for enforcing it. The law, however, became practically inoperative long before its repeal in 1868.

Bounties on
exports.

In the meantime the system of actively encouraging the prosecution of the fisheries by the granting of bounties had come into force. The first fishery to receive the benefit of this form of encouragement was the pilchard fishery, a bounty of 7s. per barrel, which was afterwards increased, being paid on all fish exported. Cod, ling, hake, and herrings were afterwards eventually included in the bounty

system, which, in the case of herrings, was extended in 1750 by the payment of a considerable bounty on vessels fitted out for the fishery for a certain period and under certain conditions. To guard against fraudulent claims for this bounty the most minute regulations had to be made as to the proper equipment of the fishing vessels, their dates of sailing and return, and other matters ; and, instead of an encouragement, these regulations were often a serious hindrance, to the fishery. "Great inconveniences have arisen," said, for instance, the Act 19 Geo. III., c. 26, from certain clauses, as to the rendezvous of the fishing fleet on the fishing grounds, enacted in an Act passed only eight years earlier ; and six years afterwards these provisions, though then amended, had to be repealed altogether. Again, the specified outfit of nets required to be carried by vessels fitting out for the bounty were found to be unsuited to the Yarmouth fishery, and here also the law had to be amended by a special Act for the purpose.

Inconvenience
of bounty
regulations.

The payment of a bounty on exported fish, even if it had the desired effect of stimulating the fishing industry and commercial enterprise generally, resulted in neutralising, if not completely defeating, the efforts of the legislature to secure an abundant and cheap supply of fish for the large towns of England, and of London in particular. The energies of the fishing population and of "the trade" were centred in the one object of qualifying themselves for the State bounties, and the English consumer had to go served, as the Act of Elizabeth said, "in very evil sort ;" so, after twice relaxing the law in order to admit Swedish herrings to the English markets, Parliament, in 1801 (by 41 Geo. III. c. 77), first granted a bounty on salmon and cod imported from Newfoundland, and next (by 41 Geo. III. c. 99), actually offered a similar bonus to all persons

Bounties on
imports.

bringing fish to the London markets and to the other great towns of England. At the same time, by another Act (42 Geo. III. c. 3), the bounties on the export of herrings were temporarily discontinued, on the ground that such a course was "highly expedient for procuring a supply of good and wholesome food for the consumption of the United Kingdom."

After such an experience as this it is surprising that a revival of the export bounties should have been tolerated. Yet the system was again resorted to a year or two later. It had, however, received its death blow, and the amounts paid were gradually reduced, the bounty on pilchards finally expiring in 1826, and that on herrings, cod, and ling, in 1829.

Did the
bounties
"encourage"
the fisheries.

Whether the bounties had any real effect in laying the foundation of the wonderful prosperity which the herring fisheries have enjoyed since their abolition is open to question. Many eminent authorities have maintained that they had no appreciable effect in encouraging the fishery, and that the fishermen went to sea to catch, not the fish, but the bounty. Even if it be granted that the fishery did receive a stimulus in the early days of the system, it is certain that it was not maintained by it in its later days, or the fishery would certainly have shown signs of a relapse after 1829. But the statistics which have happily been furnished by the Board of White Herring Fishery tell no such tale. In the twenty years preceding 1829 the average number of herrings cured amounted to 271,703 barrels annually. In the twenty years succeeding 1829 the average annual cure was nearly double, or 530,389 barrels. In the next period of twenty years—a period which, it must be remembered, embraced the seventeen years during which the restrictive or protective legislation, already referred to,

Effect of
bounties and
their abolition
on the
herring trade.

enforcing close seasons and limiting the mesh and the kinds of nets, was in force—the average quantity of herrings cured every year exceeded 652,000 barrels. During the last twelve years this annual average has been still further augmented to 924,459 barrels. The value of these figures is still further increased when the fact is taken into consideration that since 1869 the statistics refer solely to Scotland, while prior to that year they included, as already pointed out, the Isle of Man, and, before 1850, they embraced a considerable portion of the English coast as well.

Although all the laws, both “protective” and “promotive,” in regard to the herring fisheries have been swept away, one remnant of them still survives in an official, and another in an unofficial, form. Of the latter, viz. the custom which still obtains in some parts of Scotland, among the curers, of paying the fishermen a “bounty” in addition to the market or contract price of the fish, no notice need be taken here. The other, the retention of the “Government Brand” guaranteeing the quality of the herrings cured, demands some notice. This brand is a survival of the old bounty laws which required, in the case of the larger fish, like cod, that those on which the bounty had been paid should have their tails cut off, and, in the case of herrings and other small fish, that the barrels should be branded to prevent them from being brought up a second time to claim the premium. To be entitled to the bounty the fish had to be of a certain quality, and packed in a particular manner, and the Government officers, before giving the brand and passing the fish, had to examine them to see that they complied with the regulations. When the bounty was abolished it was deemed expedient to retain the brand, in deference to the strong feeling of the trade that their interests would suffer if the quality of their herrings was no

The “brand”
question.

longer guaranteed by a Government mark in the Continental markets. Its retention, however, has been condemned on the highest authority ; and in 1859, as a compromise, it was arranged that a small fee should be paid by those who desired to avail themselves of any advantages which the brand conferred on fish so marked, but that its use should not be compulsory. This arrangement has resulted in a considerable income—more than sufficient to defray the cost of the establishment required to carry out the system properly, and, although the custom can hardly be supported on any general principles of political economy, it exists on sufferance in consequence of the strong expression of opinion, on the part of the majority of the trade, repeatedly given in its favour. It would be difficult, if not impossible, to induce Parliament to extend to any other trade, or even to any other branch of the fishing trade, the system of a Government guarantee of quality. But it is urged that the maintenance of the brand is no expense, but rather a source of income, to the State ; that its retention has hitherto been highly valued by those most deeply interested in the subject ; that it has not been proved to have been accompanied by any serious drawbacks ; and that the revenue which the fees afford may be advantageously applied to the maintenance or construction of harbours, to the extension of the telegraph system, to scientific investigation of matters connected with the fisheries, and to other works which may be generally beneficial to the industry. These arguments have hitherto prevailed ; and, so recently as 1881, a Select Committee of the House of Commons reported in favour of the retention of the brand. The recent reorganisation of the Scotch Herring Fishery Board seems to promise a new lease of life to this remnant of an exploded policy, for its principal duty for many years past has been the supervision

of the packing of herrings to qualify them for the brand. But it is to be hoped that the usefulness of the Board will be increased in other directions. It has already established a strong claim to the gratitude of those interested in the welfare of the fisheries by compiling the careful statistics already quoted ; and it has also performed useful work in maintaining and extending fishery harbours. Whether the brand be retained or not, the Board has an ample field before it for the extension of its labours in these directions, and the State would do well if it not only increased the powers of the Board so as to enable it to make a scientific examination of the fisheries,* but if it also authorised the collection of similar statistics, and the prosecution of scientific inquiry, by the other Fishery Departments.

Value of
statistics.

Not only the home fisheries and those carried on in the adjacent seas, but the cod fisheries of Newfoundland, the whale and seal fisheries of Greenland and the Gulf of St. Lawrence, and even the whale fishery in the Antarctic Ocean were included in the bounty system. In the reign of Henry VIII. fish bought in "any part of Iceland, Scotland, Orkney, Shetland, Ireland, or Newland" were first exempted from the law prohibiting the sale of fish bought abroad, not from any particular desire to benefit those countries or their fisheries, but to foster a spirit of adventure among the fishermen, partly also, in all probability, to compensate for the scarcity of fish which the prohibition of foreign imports, coupled with the incentive to exportation which the bounties afforded, was causing in the home markets, and at the same time to avoid giving open encouragement to trade with the French, Dutch, and Norwegian fishermen—jealousy of whom was one cause of that prohibition.

Bounties on
vessels fitted
out for the
Greenland
and New-
foundland
fisheries.

* Since this was written the Scotch Fishery Board has undertaken such scientific inquiries as are above suggested.

The first direct encouragement given to the northern fisheries was the grant to the "Greenland Company" in 1693 of a sort of monopoly of the trade with Greenland, and of the fisheries in the adjacent seas. This company, however, failed to fulfil its mission, and ten years later the privileges conferred upon it were thrown open to all British subjects. These were gradually increased until not only was the produce of these fisheries admitted free of duty, but bounties were paid to vessels fitting out for the trade, and bounties were paid on the oil, whalebone, and scalps, which they brought home. Acts were passed prescribing the exact limits within which the whales were to be caught which were entitled to the bounty, but, as the officers of the Government were neither ubiquitous nor omniscient, they had to depend on the oath of the master of the ship whether the oil he brought home was the produce of a whale caught north of $64\frac{1}{2}^{\circ}$ N. latitude, or south of 36° S. latitude. It is to be feared that whaling captains and their crews were not proof against the temptation of asserting what no one in the world could disprove, and that the bounty system was the cause of a considerable amount of uncommonly hard swearing, and opened the door to a good many fraudulent claims on the national purse. They certainly entailed a vast amount of trouble on the tax-collectors, who had to make all sorts of allowances on salt used, or intended to be used, in or brought back from the fisheries; and there is evidence that they were a considerable burden to the country, for in an Act passed in 1785 there is a clause tempting those to whom sums of money, payable as bounties, were overdue, to exercise "forbearance" in pressing their claims, by offering them 3 per cent. interest on such unpaid bounties. The effect the export bounties had in reducing the supply of fish to the English markets has already been referred to.

It is curious that with all the encouragement given to the fisheries of foreign countries the important fisheries carried on round the Isle of Man were forgotten. It was not till 1772 that fish from the Isle of Man were exempted from the prohibition against "foreign" fish, but even then they were subject to import duty for fourteen years afterwards. It was not till the export bounty system had begun to make its effects felt, in a diminished supply of fish to the home markets, that the value of a source of supply so near home as the Irish Sea began to be fully appreciated.

This is not the place to enter into a full consideration of the effects which the series of laws passed for the "encouragement" of the fishing industry in this country had upon the condition and prospects of one region at least whose valuable store of cod, salmon, and other fish, as well as seals, attracted the attention of European fishermen very soon after its discovery; but this sketch of the history of the relations of the State towards fish and fisheries would hardly be complete without some reference to the laws made to encourage our fishermen to go to the shores of Newfoundland, and to the subsequent laws which were found necessary to enforce their return to this country. The reference is useful as another instance of the far-reaching effects of, and the remote causes affecting, fishery legislation. The national spirit of enterprise was the origin of our interest in the Newfoundland fisheries. The authority given by 10 & 11 Wm. III. c. 25 to the surrogate "admirals" and "vice-admirals" of the coast of the island, and the exemption from duty of goods imported thence, appealed at once to the ruling and to the trading instincts of British seamen; and it only needed the bounty offered by 15 Geo. III. c. 31 to make the Newfoundland fisheries, with their extraordinary abundance, a favourite resort. But the island and

The Isle of Man.

Effect of fishery bounties on the development of the Colony of Newfoundland.

the mainland of America had other attractions, and Parliament found that, instead of increasing the supply of men for the navy, it was giving facilities for the fishermen to place themselves far beyond the reach of the press-gang in a new country which promised them unbounded liberty and abundant means of subsistence, if not wealth. So special enactments were devised to enforce the return of the fishermen by prohibiting settlement in the island of Newfoundland, forbidding the desertion of the crews to the mainland, and so forth. But these Acts, though seriously hindering the progress of Newfoundland, were ineffectual for the object in view, and had ultimately (5 Geo. IV. c. 51) to be rescinded, and thus one more thread in the web of legislation which Parliament had spun round the fisheries was, after having been broken with impunity, removed by the authority that had created it.

“Promotive”
legislation
and the
oyster
fisheries.

The only form of directly “promotive” legislation now existing is in the shape of a law giving authority for the appropriation of portions of the foreshore for the purpose of oyster or mussel cultivation. But the expense attending an application for such a grant is often so great as to prohibit the very class of persons who might be expected to utilize it to the best possible advantage—viz., fishermen and others with local knowledge of the capabilities of a particular spot—from availing themselves of the opportunity which the law is intended to afford them. The profits which may be realised from the cultivation of a few square yards of ground adapted to the requirements of oyster or mussel culture, and the great advantage which ensues from the application of different methods to small areas immediately contiguous have been shown in the experience of the *concessionnaires* at the French oyster-breeding stations at Arcachon, and other places, where it often happens that

one *parc* is most productive, while its neighbour is absolutely barren ; or that one is suited for "fattening" purposes, while another, closely adjoining, is available only for "spatting" or breeding. An extension of the present system of encouraging mussel and oyster culture in the United Kingdom, not only by reducing the expense of obtaining a grant of foreshore, but by offering inducements to individual effort rather than to joint-stock enterprise, would be of great benefit to the oyster and mussel fisheries. The system might possibly even be enlarged by including areas in which crabs and lobsters could be stored and kept till they had attained the legal size.

Whatever may have been the actual part played by the bounties in the immense development which the fisheries ^{Harbour accommodation.}—both at home and in foreign waters—have experienced, it may be questioned whether the money that was spent in that way might not have been better invested in the construction of harbours. No fishery can be properly conducted unless the vessels engaged in it have adequate accommodation, not only for the discharge of their cargoes, but for shelter in time of storms. While a small harbour, again, is sufficient for small boats, the larger vessels which modern developments of both fishing and navigation are multiplying so rapidly, find the accommodation which was ample half a century ago quite inadequate, and often absolutely a source of danger. Larger boats are required for the safety of the fishermen as well as for the successful prosecution of the fisheries farther out to sea ; and thus not only larger harbours, but harbours at more frequent intervals along the coast, are more and more urgently required. What the State has done in this respect for the encouragement of the fisheries is not comparable with its long-continued energy in the matter of bounties. The White

Herring Fishery Board of Scotland has for many years administered a small Government grant of from £2500 to £3000 a year for the construction and maintenance of piers and harbours. With the limited means thus placed at its command, combined with local subscriptions raised by the fishermen and, in some cases, with the funds of local bodies, it has done much good in improving most of, if not all, the harbours on the east coast of Scotland. The British Fisheries Society, a body created by Act of Parliament in 1786, with powers to develop the fisheries generally, and with special privileges granted to it in furtherance of its work, has also achieved a considerable amount of good, having constructed at least two harbours, those at Wick and Ullapool. The latter town, indeed, owes its existence to the herring fishery and to the harbour which that Society founded there about a century ago.

In Ireland the State has from time to time granted sums of money, varying in amount, to the Public Works Department, to be expended in building, maintaining, and improving fishery harbours, the average annual expenditure upon which during the last forty years has been between £2000 and £3000. The exceptional condition of Ireland induced Parliament in 1875 to authorise the grant of loans to fishermen, to enable them to buy boats and gear, and thus to take advantage of the existing facilities for fishing. This arrangement does not come strictly under the general question of harbour accommodation, but it may be conveniently referred to here, since it has been the means, according to the reports of the Inspectors of Irish fisheries, of providing many localities with nets and boats, where harbours and piers erected or maintained by the Board of Works were lying idle and unused, and where the waters were teeming with fish which came and went uncaught.

In England little or nothing has been done by the State for the maintenance or construction of harbours, specially or solely in the fishing interests. But two Acts passed in 1861—the General Piers and Harbours Act 1861 (24 & 25 Vict. c. 45) and the Harbours and Passing Tolls Act, 1861 (24 & 25 Vict. c. 47)—gave facilities for the construction of harbours or piers generally in any part of the United Kingdom, and authorised the Public Works Loan Commissioners to issue loans to harbour authorities, at interest, and repayable within fifty years. Under these powers considerable sums of money have been advanced to several harbour authorities in the three kingdoms.

The General Piers and Harbours Act is probably susceptible of considerable improvement by a very slight alteration in one clause, which provides that any single person or body of persons having an interest in any property of a similar nature likely to be affected by a projected pier or harbour may, by withholding their written consent, prevent the Act being put into operation. An amendment of the law which would leave it to an arbitrator to settle any disputes or difficulties which might arise in the manner contemplated by the Act, or which would at least prevent a minority of individuals, or bodies, from opposing by *vis inertiae* any new works, would probably be an advantage both to the fishing interest and to the shipping interests at large. As the law now stands, it is in the power of a single individual, by simply withholding his signature, to stop the application of the powers of the Act to a work which the whole country may unite in demanding, and to compel, in the alternative, a resort to the expensive and tedious course of obtaining powers under a private Act of Parliament.

Suggested
amendment of
law as to
harbours.

The tele-
graphs and
the fisheries.

The use of the electric telegraph as an agency in the

prosecution of the fisheries is of course a modern practice ; but it has been found of immense advantage in enabling intelligence of the presence of a shoal of fish off the shore to be conveyed rapidly from one point to another. In Norway the extension of the telegraph system has been partly influenced by the consideration of affording facilities of this kind to the fishing centres ; and the absence of such a means of communication has been keenly felt in many outlying districts in North Britain. The Government, having control of the telegraph system, ought to take into consideration the value of an extension of the telegraph system into districts where its introduction could be proved to be a boon to the fishing industry. The benefits it would confer could not be estimated by counting the possible number of shilling messages that would be sent, but by the value which such messages would represent to the fishing population.

State action of this kind, however, borders as nearly upon the question of "regulation and administration" as upon that of direct "encouragement" of the Fisheries. It is a question, if not of reconciling fishery and other interests, at least of not overlooking the fisheries in dealing with other matters.

"Regulative"
legislation.

Legislation belonging to that class which has been defined as "regulative" or "administrative" has naturally been called for most imperatively as the fishing industry has grown in importance, and the numbers of persons engaged in it have increased. Where the interests of different branches of the industry conflict with each other or with other interests ; where sanitary or moral considerations call for interference ; or where national jealousies are likely to lead to disturbance, the State is required to interfere.

The first Act of this kind was passed in Elizabeth's reign (13 Eliz. c. 11), and might very well be taken, but for its quaint language, for a measure introduced in the present year of grace to deal with certain outrages alleged, apparently with too much reason, to have been committed by a certain class of foreign marauders in the North Sea. "For the avoiding of lewd outrages committed and done upon the sea coast of Norfolk and Suffolk by the catchers, mongers, and picards, pretending to buy fresh herrings, and which do cut in sunder divers pieces of fishermen's nets travelling the high seas to take fresh herring, to the utter undoing of the said poor fishermen," this Act provides that "no boats in the time of common fishing, from September 14th to November 14th, from sunset to sunrise, shall anchor upon the main sea or close to where the fishermen use to drive."

Outrages on
fishermen
at sea.

The regulation requiring all fishing boats to bear a distinctive mark, specifying the port to which they belong, and their own individual number, was framed for, among other things, facilitating the prosecution of offenders of this class, as well as for the better ordering of the traffic on the high seas generally. But a local enactment, enforcible only in one country and against the subjects of one State becomes little less than useless among a vast congregation of fishing boats—to say nothing of an incessant stream of merchant ships—gathering, often in a comparatively limited area, from half-a-dozen different nations. It is greatly to the credit of the fishing community generally that complaints of the kind heard in Elizabeth's time have been so rare. The general peace has, however, been broken in recent years by a few ill-disposed persons who failed to see that considerations of their own safety, as well as of that of others, demanded mutual forbearance and good-will.

The duties of
the State.

An evil example set, apparently, by a few Ostend fishermen, of making raids on the nets of fellow-craftsmen belonging to other countries, either for the sake of the fish they contain, or in order to disentangle their own gear when fouled by that of their neighbours, or even to clear a passage for their trawls when drift-nets set before them have barred their way, has been followed by fishermen from other countries, till the fishing in the North Sea, instead of being a peaceful occupation for orderly men, impelled, by a sense of mutual danger from the ordinary perils of the sea, to respect each other's calling and property, has come in some cases to resemble rather a conflict of hostile fleets. The marauders, armed with a destructive instrument, called a

The "Belgian Devil."

"devil," with which they could, unseen, cut through a competitor's net, have inflicted serious injury on the property of English fishermen, whose complaints of the outrages, and of the expenses they were put to in order to recover their nets in foreign ports, and of the absence of a legal remedy, at last caused an official enquiry to be held, which resulted in substantiating the alleged grievances, and in proving the necessity for an International police in the North Sea.

Numbering of boats.

The case for the establishment of such an organization is made all the stronger by the fact that the example set by the English Government of requiring their fishing-boats to be plainly marked with a distinguishing number has not been always followed, or has been followed only imperfectly, by the neighbouring States. French boats are marked in a similar manner to the English, both on the hull of the boat itself, and on the mainsail. Belgian boats are marked with only a small figure or letter on the bows; and Dutch boats are not numbered at all. If outrages such as those described are to be suppressed, it is essential, first, that there should

be a ready means of identifying offenders ; and second, that an easy and cheap remedy in a court of law should be provided. Such a provision can only be secured by an International Convention among all the countries whose fishermen frequent the same seas. The claims of morality, and of the safety and lives of the fishermen, and the interests of the different States in an important industry, alike demand prompt action to this end.

There are other matters affecting not only the "police" of the fisheries, but their "protection," that can only be properly regulated by an International Convention. So long as fisheries are confined to the territorial seas, the laws of the single State to which they belong can be enforced against all comers. But outside the three-mile limit, which is the recognised boundary of the authority of the State, complications arise which only an International law can remove. A law, for instance, might be made providing a close season for certain kinds of sea-fish, the capture of which takes place in the deep sea. But if such a law were made by one State and not concurred in by all the others interested, it would either be inoperative, even as far as the subjects of the State sanctioning the law were concerned, or it would be a great hardship upon them, in preventing them from participating in an industry in which their foreign rivals were free to engage unrestricted. If, again, a law, fixing a minimum size for the sale of fish caught in the deep sea, were made, it also would be of no practical effect, for it would not prevent the subjects of the State which made the law from catching such undersized fish and selling them in foreign countries.

Regulation within the territorial limit.

Difficulty of legislating for the open sea.

Difficulties like these, indeed, are the first practical objection to the demand which has lately been heard for the protection of soles, for instance. Before such a law

International
fishery
conventions.

were made its necessity would first have to be demonstrated, not only to the State that proposed it, but to the Government of every other country whose fishermen would be affected by it. The conclusion of a Convention embodying any such provision would be *prima facie* evidence of its necessity, for it is hardly likely that, even if one nation should desire it, half-a-dozen countries would be found to join in enacting and enforcing an unnecessary law. If, therefore, the advocates of a law of close time, or of mesh, in the North Sea, were to produce evidence that Germany, France, Norway, Holland, Belgium, and Denmark would join England in working it, they would advance a considerable step towards its adoption.

The seal
fisheries.

One such matter of pure "protection," as distinguished from ordinary "police" regulation, has already been made the subject of an International Convention, without which the object aimed at could not have been attained. The very general desire to afford protection to the immature seals in the Greenland seas led the Governments of the various nations interested in that branch of the fishing industry to prohibit the killing of seals within a certain area before the 6th of April, and to give facilities for the prosecution of offenders. In this case the remoteness of the sealing grounds from the general track of commerce would at first sight appear to be sufficient to make offenders feel sure of avoiding detection; but, as the close time was established at the earnest request of some of the most influential persons directly engaged in the pursuit, it was thought to be a sufficient safeguard to encourage informers to enforce the law by offering them a moiety of the pretty considerable penalty attaching to breaches of it.

The French
Convention.

Hitherto the history of Conventions on the subject of the sea fisheries between this and adjoining States has been

unfortunate. Prior to 1882, the only other Convention still in existence relating to fisheries was one made between England and France, to provide regulations for preventing the undue destruction of fish, and more particularly oysters, in the English Channel, as well as to prevent disturbances between fishermen of the two nationalities. With this object a Convention was entered into in 1839, and confirmed by Act of Parliament in 1843. The Convention, however, for various reasons into which it is needless to enter into detail, has proved unworkable, and was superseded by a new Treaty in 1867, which framed a series of regulations for the fisheries in the Channel between Englishmen and Frenchmen. This Treaty, though confirmed by Act of Parliament in 1868, has never come into practical operation, except in one particular, on account of the objection entertained by the French Government, among other things, to the trial of French subjects in English courts. Offences under the Treaty are clearly defined, and may be prosecuted ; but English complainants must follow French offenders to French courts, and the provisions are practically in abeyance. The single exception alluded to is in regard to the question of a close time for oysters, which was fixed from June 16th to August 31st. Both Governments have been enabled to pass a law prohibiting boats from carrying dredges between those dates, and forbidding the sale of oysters taken beyond the three-mile limit between those dates ; and, as common action has been taken in this respect, these bivalves are adequately protected in accordance with the views entertained on both sides on this subject. In all other respects, in such important matters as the prosecution of offenders, the admission of English fishermen to French ports, and of French fishermen to English ports, to sell their fish, and the prevention of disputes, the Convention remains a dead

letter; and, although the Convention of 1843 has been revived by an English Act, whereby provisions of doubtful practicability touching some of these points have been re-enacted, so far as French offences against English fishermen in the Channel are concerned, the broad result is that no machinery exists for preventing or punishing acts committed at sea, which would never be tolerated for one moment within the three-mile limit.

If the "Belgian devil," by the outcry it has occasioned, leads all the States interested to bestir themselves, and place their relations with fishermen and the fisheries on a proper footing in such matters as these, its recent appearance as a cause of strife among the fishermen in the North Sea will not be regarded as an unmixed evil.

Prevention of
social abuses
at sea.

The enquiries regarding the "devil" have resulted in bringing to light another evil which equally deserves and demands repression. "Floating grogshops of the worst possible description, uncontrolled and unregulated by any superior power or force whatsoever," and known as "coopers" or "bumboats," have lately been introduced among the fishing fleets, tempting the fishermen with vile spirits under pretence of selling water and provisions, and taking advantage of their solitary and often monotonous position to induce that taste for drink which is only too easily acquired, but against which, as a rule, our fishermen, when left to themselves, have been proof; these boats are officially declared to be the cause of "evils which not only include theft, gross breaches of trust, assaults, violence, robbery, obscenity, and smuggling, but even in not a few cases result in violent deaths." The repression of such a nefarious traffic is surely an object which not one State, but all, in a united effort, should have at heart in their many-sided relations with fishermen and fisheries.

There is every reason to hope that such a united effort will be made to deal with some, if not the whole, of the matters above referred to, and others connected with the "police of the seas." At a Conference held at the Hague last May (1882), a Convention was signed by the representatives of England, France, Germany, Belgium, and Denmark, with provision for the subsequent adhesion of Norway and Sweden, "the object of which," to quote its own words, "is to regulate the police of the fisheries in the North Sea outside territorial waters." Lord Granville has given notice of his intention to introduce a Bill giving force to the provisions of that Convention, and when full effect to it is given by the authorities of each State concerned, the fisheries of the North Sea will be under a system of supervision, which will provide a remedy against such "lewd outrages" as Queen Victoria's, as well as Queen Elizabeth's, subjects have been subject to. All fishing boats will be marked in such a manner as to be easily identified; their fishing gear will be similarly distinguished; "devils" and their like will be forbidden altogether; the prosecution of offenders will be facilitated; disputes between trawlers and drifters will be rendered less frequent;* and generally the fishermen will be subject to a control which will secure the peaceful, orderly, and, let us hope, profitable and safe prosecution of the important industry in which they are engaged.

Where the State interferes either in its own waters, or in conjunction with its neighbours in the deep sea, to adjust disputes between one mode of fishing and another, or to

*Necessity for
impartiality
of State
regulations.*

* By the English law, and also in the French Convention, it is provided that no trawler shall come within three miles of a drifter. This enactment will, under the Convention, be applicable to all vessels in the North Sea.

Seiners &
drifters.

reconcile conflicting interests, it is bound to act with the strictest impartiality and only upon the fullest information. This unfortunately has not always been the case. For many years, for instance—since the time of Charles II., if not earlier—special legislation has existed in Cornwall, by which seine owners have been afforded greater advantages than drift-net fishermen have enjoyed. In 1662 (13 & 14 Ch. II. c. 28) drift-nets were prohibited from coming within a league and a half of the shore between June 1st and November 30th. On the face of it, such a law was only enforceable within two-thirds of the limits to which it professed to apply. Possibly it was intended as much for an “encouragement to navigation” by forcing boats out to sea as for a special boon to the seiners; but the privileges which it afforded to the latter, who use a kind of net only applicable to fishing within a short distance of the shore, were continued by 16 Geo. III. c. 36, which imposed a penalty on line fishermen, in Devonshire and Cornwall, fishing between July 25th and December 25th. This Act, however, adopted the somewhat fairer policy of enacting that seiners must keep within a certain distance of the shore, although the limit fixed, twenty fathoms, was insufficient for the purposes of the fishery. An amendment Act (4 & 5 Vict. c. lvii.), on the other hand, went to the opposite extreme in directing that within the limits of the “stems,” or seining stations, no drift-net boat, or vessel other than a seine-boat, should anchor at night-time within 1200 fathoms of the shore, and that no person should fish with hooks or with any net other than a seine within 1000 fathoms of the shore at any time. These provisions, it is true, only extended—and still extend—to St. Ives; but the Sea Fisheries Act, 1868, practically applies them to the whole coast of Cornwall (except that part which lies east of

Trevoze Head), by enacting that no person other than a seiner may fish at night within two miles of the shore, or fish at all within half a mile of a seiner. Considering that in recent years the practice of drift-net fishing has almost superseded that of seining, these provisions seem unnecessarily severe upon one and the leading interest, without conferring any corresponding benefit on the other.

The question of Seiners *versus* Drifters is akin to the Drifters v. Trawlers. question of Drifters *versus* Trawlers, which is agitating the minds of the fishing community at large at the present time. Trawlers generally, and steam-trawlers in particular, are objected to on two grounds: first, that they unnecessarily disturb the drifters and line fishermen; second, that they are destructive to both fry and spawn of sea fish, and to the clam and mussel beds on which the line-fishermen are dependent for a large portion of their supplies of bait. The feeling against the trawlers has been embittered by the action of some of this class of fishermen in wantonly destroying drift-nets in the North Sea by the means of the "devil." It is, however, one thing to prevent trawlers from committing wanton mischief, and to place them under proper regulations to prevent accidental injury being done by them to competitors who, from the nature of their mode of fishing, have not the same freedom of action; but it is altogether another thing to suppress them absolutely, or to place them under unreasonable restrictions. At the present Value of trawling industry. moment we are mainly dependent on trawlers for the supply of at least three or four kinds of fish held in the highest estimation—turbots, soles, brill, plaice, and gurnard for example; while we also receive a considerable quantity of haddock and cod from the same source. The supply of fish from the trawl fishery is more regular throughout the whole year than from any other mode; and the capital

invested in this particular branch of the fishing industry is enormous. Some of the larger trawlers measure as much as 90 or 100 tons, and cost, when fitted with gear and stores complete, not far short of £2000 a piece. To annihilate such an industry by prohibiting the use of the trawl altogether, or, as some propose, to forbid trawl vessels to fish at night, or within a certain hard and fast limit from the shore, because they interfere with some other mode of fishing is one thing. To place so powerful an interest under restraint, so that it may not tyrannously override modes of fishing perhaps less imposing, but none the less useful and of far greater antiquity, is another thing. The power which the State has taken by a recent Act to prohibit, on good cause shown, the use of trawls in localities where beds of clams, mussels, or other mollusca exist is perfectly justifiable on the ground that such beds are of immense importance to the line fishermen for the supply of bait, and that they are liable to be rapidly exhausted if incessantly fished over. But even this power will be exercised only where adequate proof of its necessity exists. No such proof has certainly yet been afforded of any substantial damage being done to the fisheries by the alleged destruction by trawls of the spawn and fry of fish.

The Scotch Herring Fishery Board, in 1861, prohibited the use of the beam-trawl upon the Traith, at the urgent request of the fishermen, who alleged that it was injurious to the spawn of herrings. Satisfactory proof was afforded that this prohibition had not the slightest effect in improving the herring fisheries in the neighbourhood, and it was removed. Its removal, on the other hand, has not had the slightest injurious effect on the herring fisheries.

Protection of
bait beds.

Effect of the
beam trawl
on herring
spawn and
fisheries.

This experience is the more remarkable from the fact that the spawn of the herring is the only spawn of sea fish

which is known to be deposited and to lie on the bottom of the sea, where it might be supposed to be peculiarly liable to destruction by the beam trawl. Quantities of it, in the shape of a jelly-like mass of tiny glutinous globules, are occasionally brought up in the trawl; but the number of eggs destroyed in this way—and that they are all actually destroyed there is no positive proof, since some may possibly develop when cast overboard again—bears so infinitesimal a proportion to the incalculable millions of myriads left in the sea, uninjured and untouched, that it is quite as likely that the sea itself may be emptied by the efforts of the Great Eastern Railway Company to supply London with sea-water, as that the herring tribe will be exterminated by the action of the trawl.

If it were possible to exterminate the herring at all, this feat ought to be in a fair way towards accomplishment by the use of what is considered the legitimate herring-net, the drift-net. Last year the Scotch Herring Board branded 231,549 barrels of herrings as "Crown Fulls." Each of these barrels contained about 800 herrings. Probably half of these herrings were females, containing about 30,000 eggs each. Therefore the 231,500 barrels contained not only $231,500 \times 800 = 185,200,000$ actual fish, but $\frac{185,200,000}{2} \times 30,000 = 2,778,000,000,000$ fish in embryo in addition, and represented therefore a total destruction of 2,778,185,200,000 herrings *in esse* or *in posse*. But the 231,500 barrels of "crown fulls" branded were only one-fifth of the total quantity of herrings cured, and probably not one-tenth of the number killed in Scotland alone in one year, so that even the above enormous computation must be still further increased before the real destruction of herrings by the agency of man can be represented in figures. To this calculation must be added the still vaster quantities of

Is it possible
to exterminate
the herring?

herrings devoured year by year, day by day, hour by hour, by their natural enemies—the whales and porpoises, the sea-birds, the cod, ling, hake, and other predaceous fish with which the waters teem—before we can arrive at any numerical representation of the multitudes of herrings existing and reproducing their species in the seas around our coasts. It has been calculated that the Scotch gannets alone consume every year 37 per cent. more herrings than all the Scotch fishermen catch in their nets, and that the cod, ling, and hake, in the waters adjacent to the Scotch coasts, destroy nearly thirty-seven times as many herrings in a year as are taken by Scotch fishermen alone. These computations take no count of the eggs contained in the herrings thus consumed.

Complaints
of one class of
fishermen
against
another.

But there is hardly any mode of fishing that has not, at some time or other, in different countries, and under varying conditions, been objected to either on the ground of undue destructiveness, or of interference with other methods. As the drift-net fishermen complain of the trawlers, so the seiners complain of the drift-nets, and the drift-nets, again, on the west coast of Scotland, of the circle trawls or seines; the long-line fishermen denounce the trawlers, and the hand-liners—at any rate in America—object to the long lines or trawl lines as they are there called. And so on to the end of the list. If all these complaints were made the basis of repressive legislation, we should soon be reduced to the necessity of attracting our fish, Arion-like, by music to the markets, or of practising the art of “tickling” in the deep sea. It is, however, the duty of the State to keep a watchful eye on the operations of the fishermen, and, while refusing to hastily prohibit any new development of their art, to adjust their differences that all branches of the industry may have

a fair chance of fulfilling the principal object in view—the regular and increasing supply of food for the people. Where mere destruction, as distinguished from the profitable capture, of fish takes place, prompt remedy should be provided. The complete interdiction of dynamite as a means of killing fish is a case in point. It is proved that the waste of fish, caused by an explosion of dynamite, is many times greater than the harvest reaped ; for every fish picked up, perhaps a score or a hundred may be destroyed directly, while a shoal of fish may be dispersed that would otherwise have been captured by legitimate fishing. In the prohibition of proved abuses of this kind the interference of the State is properly exercised. Where no such proof exists, its action should be limited to the maintenance of order and the adjustment, if need be, of disputes.

On the other hand so many different causes, in addition to the operations of the fishermen, have been suggested to account for an occasional scarcity, real or supposed, of fish, that, if any of them were really to any large extent contributory to the general result, it would be a hopeless task for the State to attempt to arrest the complete decay of the fisheries with which modern Cassandras threaten us. A lengthy list might be made of the artificial causes, other than “overfishing,” which have, at different times and according to different authorities, affected the productiveness of the fisheries ; but the following brief selection will suffice :—Steamboat traffic, noises in boats, gutting fish at sea, ringing church bells, artillery practice, using fish as manure, burning kelp, the erection of lighthouses, the wickedness of the people. Of all these alleged causes only the last, it is to be feared, has been, and is likely to be, a permanent factor in the case. Long before steamboats and lighthouses, the occasional scarcity of fish had been

Fishing with dynamite.

Effect of artificial causes on the fisheries.

lamented in Norway and Holland as well as England ; while such practices as gutting fish at sea and using them as manure have, in many places, been carried on continuously without being accompanied by any change in the quantity of fish. So far as man's operations are concerned, the evidence collected hitherto goes to show that, in regard to the sea fisheries at least, their effect is very slight, and is appreciable at the most within very narrow limits.

Fishery
apprentices.

But apart from the question of advantage or disadvantage to the material prosperity of the fisheries, many other matters affecting them call for the intervention of the State. The physical and moral welfare of the men, and particularly of the lads and boys, engaged in the fisheries cannot be disregarded any more than that of any other class of the population. Recent disclosures, indeed, show that more than usual vigilance is required to ensure the proper treatment and protection from unwholesome moral influences of young persons taking to a fisherman's life. The State has been somewhat remiss in neglecting to place the relations between employers and employed in this industry on a proper footing. A Committee recently appointed by the Board of Trade to enquire into this subject has reported that "the unsatisfactory relations existing between the owners and crews of some of the fishing vessels" on our coast are an actual drawback to the progress of the industry. "It is obvious," the Committee adds, "that the most important considerations" depend upon "the condition of the lads, inasmuch as it is upon their character, habits, and competency, and the inducements offered to respectable boys to fill their places, that the future conduct of the trade mainly depends." Proposals have consequently been made for giving force to these views, and, as the subject is still engaging the

attention of the Government, it is unnecessary to enter more fully into it here.

One illustration of the influence which the fisheries exert on legislation generally, and of the many directions in which they claim consideration at the hands of the State, may perhaps be permitted here. In the laws regulating the employment of women and children in factories, the preparation of fish is specially exempted from the rules limiting the age of children and young persons, and the hours during which women may work. The absence of any such exemption would be a serious hindrance to the fishing industry.

The fish trade
and the
Factory Acts.

A more striking illustration of the position which the sea-fisheries occupy as an industry of the first importance could hardly be found than in the prolonged negotiations which the regulation of the lights to be carried by fishing vessels at night has given rise to in the recent revision of the "Regulations for Preventing Collisions at Sea." As fishing is mostly carried on at night, and as thousands of vessels of all sizes up to 100 tons, or even more, are "travelling the high seas to take fresh" fish—sometimes congregated in great numbers in a comparatively small area, sometimes fishing separately—it is essential that the clearest and simplest regulations should exist as to their distinguishing lights. The introduction, within the last fifty or sixty years, of trawlers, and, within the last five or six years, of steam trawlers, has brought with it a fresh complication. A fishing-boat may be either simply sailing to or from the fishing ground, or fishing her nets, or lying at anchor; a trawler may, of course, be any of these, but she may also, while fishing, become accidentally fast to rocks or wreckage, and so be practically anchored; a steam trawler, again, is not only a fishing-boat under one or other

Lights for
fishing vessels.

of these conditions, but she has also to carry the distinctive "white light at the masthead" of a steam-ship. This is hardly the place to enter into the discussion of a question involving much technical detail, but the fact is not without significance that the fishing interest prevailed upon the framers of the new regulations to modify them in their favour, and that the principal point on which the negotiations turned was the nature of the light to be carried by a trawler.

The new regulations, as at first drafted, proposed that a boat, when employed in drift-net fishing, should carry two red lights vertically one over the other, not less than three feet apart; and that a trawler, when "at work," should similarly carry two lights, one red, and the other green. No provision, however, was made for a trawler accidentally made fast through the net becoming fixed at the bottom. Trawlers had been in the habit of carrying, without authority, the white light indicating a vessel at anchor, on the ground that when at work these boats are more or less unmanageable and stationary; and for this reason they objected to the new regulations. It was also alleged that the use of coloured lights, which are only visible at a distance of 3700 yards if red, and 2700 yards if green, as against 4850 yards if white, was incompatible with the law which keeps trawlers and drifters three miles apart. The ultimate arrangement arrived at was that two white lights on board drifters, and a red and a white light on board trawlers, should be substituted for the two coloured lights; and that trawlers, when "fast," should use the light required to be shown by a vessel at anchor.

Distinction
between sea
and fresh-
water
fisheries.

Two points come out very clearly in this sketch of the history of fishery legislation:—Ist, that a distinction must be made between the sea-fisheries and the inland fisheries

(including salmon and fresh-water fish) in considering the influence which man can exert in the way of protection and in the way of destruction ; 2nd, that legislation, whether protective, promotive, or regulative, should only be resorted to on the clearest proof of necessity, and after a full consideration of its probable effects, not only on the fishing industry, but on the many other interests with which that industry is directly or indirectly connected.

On the first point the distinction between inland fisheries and sea fisheries is both natural and necessary. Fish confined within a narrow area, their access to or egress from which can be completely barred without difficulty, and in which they can be destroyed at the will, often, of a single individual, lend themselves easily to the influence of wise legislation conceived in their interest, or of destructive measures, carried on with a view to immediate gain, and in obliviousness of the future. This is particularly true of *Salmon*, those species which, living part of the time in the sea, and part in the headwaters of a river, require to have a right of way backwards and forwards. Such fish are at the mercy, not of one individual alone, but of a series of persons—to say nothing of natural difficulties. One man may wish to preserve the salmon in his water, but since he cannot confine them there they may pass on to his neighbour, who is intent on destroying them. The single example of the Thames, the largest river in England, is sufficient proof, if special proof were needed, of the ease with which salmon may be exterminated. In the case, therefore, of salmon at least, the call for protection is loud, and the duty of the State is clear. With purely fresh-water fish the urgency of the call for protection is not necessarily so urgent, but it may very easily become so.

But in the case of fish living entirely in the open sea the *Sea fish*,

circumstances are widely different. Instead of being virtual prisoners before they are actually netted, the fish are roaming in a state of complete liberty in an element over which man has absolutely no control ; of which he can only skim the surface, and scratch the bottom here and there ; into which he can only peer at the best—even with the aid of water-telescopes and other appliances—a few fathoms ; and in which he can no more confine the fish than he can enclose the birds of the air with a single net. One exception, or at most two exceptions only, can be made from this general description of man's relation, in fishery matters, to the sea. The first exception would embrace those creatures which, local in their habits and habitation, are placed by nature in a position somewhat akin to that of fresh-water fish, viz. the crustacea and mollusca which, living principally on the fringe of the coast, and slow in their movements, if not actually motionless (like oysters and mussels when firmly established on their beds or scalps), are easily entrapped, and the supply of which, if not susceptible of annihilation, may be largely overdrawn. Seals, and possibly such fish as smelts or sparlings, may be included in this first exception ; while the second exception would embrace the whale, an animal of slow reproductive power, whose fecundity bears about the same proportion to that of an average fish as 1 does to 1,000,000. It is obvious, however, that even these exceptions are not on an exact equality with inland fisheries from the point of view from which we are regarding them. At any rate, it has not yet been established, as clearly as it has in the case of salmon, that man's operations could actually annihilate either crabs or lobsters, oysters or mussels, seals or whales.

Littoral fish
and animals.

Crabs and
lobsters.

Legislation, therefore, on these points is, and should be,

only tentative and experimental. At the present moment a very interesting experiment is going on upon the coast of Norfolk, where the fishermen have applied for, and have obtained, a local order establishing certain stringent regulations for the protection of the lobster and crab fisheries, in addition to the very moderate provisions of the law applicable to the whole country. If these regulations fulfil their object, they will afford *prima facie* proof of the advantage of extending them to the rest of the country. If they fall short of their intention, or cause any unforeseen inconvenience, little or no permanent harm will have been done, since, under the special provisions of the law which sanctions them, they can be abrogated without the necessity for going to Parliament for a repealing Act. Experimental legislation.

This consideration is a strong argument in favour of leaving the application of any protective law as far as possible, and as far as consistent with general principles, to the discretion of a local body, subject to the approval of a central authority. The advantage of this system has been proved in the case of the salmon fisheries, and to a lesser extent in the case just referred to. Its extension would not only prevent a considerable delay and expense, but would enable the law to keep pace with the developments of the fishing industry, and its varying requirements.

The second point brought into prominence in this review—the necessity for providing itself with the fullest possible data before the State proceeds to make any legislative enactments in regard to the fisheries—is illustrated by the foregoing remarks. It is a remarkable fact that the period of the greatest abundance of laws relating to the fisheries was the period of least activity in investigation; while the commencement of the era of practical enquiry and scientific research was the doom of a cumbrous array of con-

Necessity for fullest information on all matters relating to fish and fisheries.

flicting statutes. The Salmon Fishery Act of 1861 repealed no less than thirty-three statutes dating from Magna Charta. The Sea Fisheries Act of 1868 swept away, in whole or in part, sixty-four Acts of Parliament dating from Henry VII. Both these Acts were the outcome of several Commissions or Committees of Enquiry, and every addition to them has similarly been based upon the recommendations of bodies specially appointed to make enquiries and advise the Legislature. The recommendations of these Commissions have, in many cases, been confirmed in a striking manner by independent scientific research. The anti-trawl agitation, for instance, has lived upon the assertion, *inter alia*, that the trawls destroy the spawn of cod, ling, whiting, and haddock.* But the trawl works along the bottom of the sea, and it has been demonstrated by Prof. G. O. Sars beyond the possibility of a doubt—and any one can prove it for himself—that the spawn of the cod and of the haddock floats on the surface of the water, and can no more be injured by the trawl than by the gun of the grouse-shooter. A single fact like this is worth more, as a guide to the State in framing legislation, than oceans of loose opinions and doubtful inferences, of prejudiced statements founded on imperfect observation ; and it is a question, well worthy the attention of the State, whether it should not take up the study of the natural causes affecting the fisheries as a part of its machinery for their regulation. If the operations of man form a wide subject for investigation, the influences of Nature afford a still vaster field of observation ; and a knowledge of them is quite as necessary as a knowledge of the effect of artificial influences, in framing and directing legislation.

* The question of the trawl and herring spawn has already been touched upon.

Floating
spawn and
the trawl
question.

The value of an accurate knowledge of the habits of fish, as a preliminary to legislation, has been abundantly proved in the case of the salmon fisheries. The natural history of the salmon is the basis on which salmon legislation is founded. We can say with absolute certainty that this fish ascends our rivers from the sea, almost to their source, to breed ; we can say positively which is the reproductive portion of the stock ; we know that if we do not allow the spawning fish to ascend the streams we shall have no young fry ; and that if we destroy the young fry or the eggs we shall have no fish for breeding or for eating. On these facts the principles of salmon legislation are founded, for on these facts depends the possibility or otherwise of increasing or diminishing, or even of exterminating, the breed of salmon.

Natural history of the salmon, a preliminary to salmon legislation.

Just such a combined observation of natural conditions and of artificial influences is necessary in the case of the sea-fisheries. If the State cannot do anything to increase the supply of fish *in* the sea, it may do much in the discovery of fresh means of increasing the supply of fish which we draw *from* the sea. When, as the result of scientific research, we are fully acquainted with the life-history of the herring, or the cod, or the sole, and with the many natural phenomena which influence the habits of any of these fish, we shall be in quite as good a position to say how, when, and where they may be most easily caught in the best condition, and in the largest quantities, as to interdict times and modes of fishing which are really injurious. It is quite within the bounds of probability, not only that all the modes of fishing now adopted, many of which are denounced as fatal to the permanent prosperity of the fisheries, may be proved to be absolutely without effect on the stock of fish in the sea, but that many new

Influence of scientific research on future development of fisheries.

appliances might be adopted which would vastly increase the supply of fish without injuring the permanent stock in the sea. Both with this object, and for the purpose of deciding whether any, and what, restrictions on fishing are necessary, a fuller knowledge of the habits of sea-fish is essential. But only the most careful and continuous investigation will discover the manifold laws of Nature which govern the migrations of fish, their spawning times and places, their development, the nature of their food, and all the other secrets of their economy. In the case of the herring fisheries alone a knowledge of these facts would possibly have saved many a thriving centre of the herring fishery from the decay which has followed the mysterious disappearance of these fish from the coast. If, when the fishermen are lamenting the absence of the accustomed shoals of herring on their coasts, and fruitlessly throwing the blame on their neighbours, the State could step in with the assertion that the fish had disappeared because of certain conditions, either of temperature, of food, or of currents, which the fishermen could hardly be expected to take cognizance of, and could tell them where they, or others like them, could be found, it would be giving the most substantial form of encouragement to the fisheries. Many thriving cities, founded, so to speak, on a shoal of fishes, have risen to a state of great wealth and influence through the fisheries in their immediate neighbourhood, and have as suddenly fallen into decay through the fish forsaking the coast. In the history of Ullapool in our own time, and, in remoter ages, of Marstrand and Uddevalla,* and other cities

Mysterious disappearance and return of herrings.

* The history of the fluctuations in the fisheries of the Province of Bohuslän affords the most remarkable examples of intermittent abundance and scarcity of herrings. For about 30 years, more or less, in succession, in each century from the 10th to the 17th, the

of Norway and Sweden, striking instances of this may be found. How different might have been the fate of these cities if the fishermen had been able to follow the fish in

herrings were present in the greatest abundance; and during the 60 years from 1748 to 1808, this was again the case. In the intervals, the fishery was a complete blank. In 1787 there were in Bohuslän 338 salting houses, and 429 oil-refineries, with a total of 1812 boilers, using 40,986 barrels of herrings per day. The number of large seines was 358, and of boats 2100. These figures even increased considerably during the following years. In 1831, however, Herr O. Lundbeck, describing the district, says: "He who knew the coast of Bohuslän 25 years ago, and now sees it again, will scarcely be able to refrain from tears. Then it presented an imposing appearance. From the sea itself rose massive walls and pillars, supporting immense salting-houses and oil-refineries. Farther inland rich warehouses and busy workshops might be seen, as well as palatial residences of the merchants, and neat cottages of the fishermen and working men. The coast was crowded with a busy throng, and the sea studded with sails. Every night it looked as if there were a grand illumination, many thousand lights shining from the windows and from the numerous lamps along the quays, and being reflected in the waves. Everything was life and bustle, and tons of gold changed hands. Now nothing is seen but ruins, only here and there a dilapidated fisherman's cottage, awakening melancholy thoughts in the heart of the visitor." The most extraordinary reasons were suggested by the fishermen to account for these fluctuations. The old historian, Peter Claussön, in his '*Norriges ocomliggende Oers sandfaerdige Bescriffuelse*,' writing in the 16th century, and referring to the "very extensive herring fisheries in Vidsidan" (or Bohuslän), says that they "have disappeared by magic, bad men having sunk a copper horse in the sea, and thereby driven the herrings away from the coast." Among other curious suggestions, the list of which is similar to that already quoted, was the "wickedness of the people." This idea, which apparently had some foundation in the unfortunate condition of lawlessness and immorality into which the Province had fallen, seems to have impressed itself upon the attention of the Government from time to time; and in 1590, when the fisheries were beginning to decrease, a law was passed with the provision that, "since there is danger that God may withdraw His blessings on account of the great

their mysterious migrations, instead of waiting helplessly for their return, and being obliged eventually to abandon their own homes !

Whether scientific observation, encouraged and supported by the State, as an intimate branch of its organisation for the

sins and vices of the inhabitants of the coast, our tax-gatherers, each one in his district, shall see to it that people in the fishing stations lead good and Christian lives ; that there is preaching every Sunday, and people are exhorted to lead a godly life, so that God may be moved by the prayers of good Christians to extend His blessings to us also in future." Among other reasons it has been contended that, during the last great Bohuslän fishing, the seine nets drove away the herrings from the coast, the reason being, as alleged, that the herring shows great terror of the seine, from which it tries to escape by rushing through, under, or over, the net. But this peculiarity is observed in Cornwall, in the case of the pilchards, which is, or at any rate was, until very recently, principally captured by the seine ; and there is no reason why the pilchard should not be driven permanently from the Cornish coast, through the use of this net, quite as easily as the herring from the Swedish coast. But this has never yet been shown to be the case. In support of the allegation that the seine net was the ruin of the last great Bohuslän fishery, it is urged that the nets were generally used in the daytime during the first half of the period, while during the latter half they could only be used by night. Even supposing that there were no reasons, such as the greater clearness of the water in the daytime, to account for this change of practice, it cannot be alleged that the day fishing had seriously affected the movements of the fish, since the second half of the period was more productive than the first ; and, if the change from day to night fishing was sufficiently beneficial to account for this improvement, that fact alone would have been sufficient ground for expecting the fishery to continue without deterioration, under conditions supposed to be more favourable to the fish, for a much longer period than it had under the less favourable circumstances. If, again, over-fishing was the cause of the periodic decline of the fisheries, the last period of abundance, which was double the length of any of its predecessors, ought, *prima facie*, to have been the shortest of all, since the tendency of fishermen is always to employ more and more destructive instruments of fishing.

administration of fishery laws, ever achieves so full a success as to be able to follow the most valuable kinds of fish in all their movements, or not, it would be sure to throw a flood of light on other subjects which have quite as great, if not so direct, an interest for the fisherman, and quite as immediate a bearing upon the course of his operations. The Norwegian naturalist, Professor Särs, whose observations led to the important discovery that the spawn of the *gadidae* floats, his countryman Carl Bocck, and, in our own country, Dr. Günther, Professor Huxley, Yarrell, Jonathan Couch, and observant practical fisherman like Matthias Dunn of Mevagissey, have done much to remove the clouds of ignorance and doubt which have obscured the natural history of fish; but much more remains to be done than has ever yet been accomplished, and in taking up this work, and directing and encouraging others in it, the State would be conferring a great boon on the fishing interest. A comparatively small outlay would enable it to do all that is requisite, for, without taking out of their hands the work of private individuals, it would be able to centralise the result of such labour, and direct it towards particular points which required elucidation.

State aid in scientific research into fish and fisheries.

Whether in conjunction with, or apart from, such an organisation for scientific research, the collection of full and accurate statistics of the quantities of fish caught, sent to the home markets, and exported; of the numbers and value of vessels and boats engaged in fishing; of the quantity, description, and value of their fishing gear; and of the number of persons engaged in the fisheries and in industries connected therewith, ought to be one of the first duties of the State. At the present time the only really complete and accurate statistics relating to the fisheries are those compiled by the Scotch Fishery Board in regard to the

Fuller statistics required.

herring fisheries of that country, and, in a less degree, to the cod and ling fisheries. The value of these statistics in enabling a judgment to be formed of the effect of legislation affecting those fisheries has been very great. Without them it would have been impossible to say, so decisively as can now be done, whether, for instance, the abolition of the bounty, or the imposition of a brand-fee, or the enactment or abrogation of the laws relating to close season, and mesh of nets, had a beneficial result or otherwise. Besides these, a few incomplete returns are published concerning the salmon fisheries of England and Wales, and some of the Irish Fisheries; and a certain amount of information is also available as to the number of fishing-boats registered in the United Kingdom and their crews. The record of the past history and present condition of our sea-fisheries, so far at least as their produce is concerned, is otherwise a complete blank.

As the recent Report of the Sea-Fishery Commissioners of 1879 says, "the value of the fisheries in this country may be computed in millions; the capital invested in them in millions; the persons dependent on them in hundreds of thousands." Notwithstanding this, there "are no means whatever of comparing by figures their yield now with their yield in former years."

In this respect we are behind almost every other nation, yet evidence is constantly accumulating to show the important use which would be made of such statistics. Besides serving, as has been suggested, as a gauge of the effects of legislation, they might be of great service in negotiations with foreign powers—in such a matter, for example, as the misunderstanding which appears to have arisen between this country and France in putting in force the Convention of 1867. In the recent negotiations at Halifax, N.S.,

between Canada, Great Britain, and the United States on the subject of the Fishery Clauses of the Treaty of Washington, when it was essential that good evidence of the money value of the fisheries in Canadian waters, as compared with those in American waters, should be forthcoming, the statistics collected by the Commissioner of Fisheries in Canada proved of the greatest assistance to the representatives of the Powers concerned. "One special point to be determined," says Professor S. F. Baird, the United States Fishery Commissioner, in his report for 1877, "was the value of the inshore sea fisheries of the United States from the Bay of Fundy to Delaware Bay. The absence of any system on our part for collecting facts on this subject was never more fully appreciated than when it was needed to protect the United States against an unjust award. . . . The American side laboured under a serious disadvantage for want of methodical and regular statistics of the fisheries of the United States. The case was quite different, however, with the other party. The authorities of Canada had for many years kept and published annually an extremely exhaustive account of everything taken in their fisheries, giving the number of each kind taken and preserved in each province, county, and district, as also the exportations to foreign countries, including the United States. It is greatly to be hoped," continues the American Commissioner, "that, whether with reference to future conventions of this kind or not, the necessary steps will be taken by the United States to secure data corresponding to those taken regularly and systematically in Canada." By the substitution of "the United Kingdom" for "the United States," these words may be echoed on this side of the Atlantic. Even if our statistics should never be required as evidence in matters of *la haute politique*, they would have

Evidence of
importance of
fishery
statistics.

many other not less useful if more humble purposes to serve in the daily administration of the Fishery Laws.

Facilities to
fishermen for
acquiring
scientific
knowledge.

The value of scientific research systematically carried on by the State, or under State supervision, would lie not only in the assistance it would afford to the servants of the State in administering the law and in directing its amendment, but also in the opportunity it would afford to the fishing population of satisfying themselves that the State was right in any action it might take, based on the results of its scientific information. The dissemination among the fishermen, on State authority, of information which they could hardly be expected to acquire themselves, but which they could, when properly directed, prove for themselves, would reconcile them to many decisions about the correctness of which they would otherwise prove sceptical. The State already undertakes the direction of "art" education, and acts directly as a teacher of "science" generally, with special application to mining and engineering pursuits. It could hardly render greater service to the great national fishing industries than by affording facilities to the fishermen for applying the teachings of science to the practical operations of their craft. This might be done by encouraging the creation of local museums and libraries having a special bearing on the fisheries, by giving prominence, in the schools under State regulation in the great fishing centres, to subjects connected with this important subject, and by countenancing a National Society devoted to the interests of the fisheries.

General
conclusions.

To sum up the matter, the present position which the State holds in this country towards the fisheries and fishermen may be briefly stated as follows :—

After seven centuries of legislation, during which the fisheries have undergone a vast development, and have seen great changes, both in the methods of working them, and in

their relation to other interests, the State has decided, after full investigation, to abolish, with but slight exceptions, all former enactments, many of them inconsistent with themselves and with each other, many of them defeating their own objects, and most of them practically inoperative, and to substitute for them a new law, distinguishing between inland fisheries and sea fisheries—with a further slight distinction between certain branches of fishing carried on close to the shore, and others mainly prosecuted in deep water—and to apply to each branch a definite principle. All direct incentives to the prosecution of the fisheries, in the shape of bounties, have been removed ; all attempts at protection not absolutely proved to be necessary or likely to be of advantage, have been abandoned : and the interference of the State has been confined to the maintenance of law and order, the prevention of unquestionable abuses, and the adjustment of disputes between conflicting interests.

The practical result of this policy, reduced to a system, *Résumé of laws.* is as follows :—

1. The salmon and trout fisheries, being most susceptible to destructive tendencies, are placed under severely "Protective" laws, which may be adjusted to local requirements, but not abrogated, by local conservators. Salmon.
2. Other fresh-water fisheries are also afforded a slight protection, maintainable or not at the discretion of local bodies or private owners. Other
freshwater
fisheries.
3. The sea fisheries, being least susceptible to destructive agencies, are placed under a law which, with but very slight exceptions, gives perfect freedom to the fishermen to fish when, where, and how they please, so long as they respect the rights of others. Sea fisheries.

Littoral
fisheries.

4. That branch of the sea fisheries which may be defined as the Littoral Fisheries (including oysters, crabs, and lobsters), is placed under slight restrictions, which may be increased on local proof of necessity or desirability.

Future of the
fisheries.

This position is a strong one. The principles it embodies are theoretically correct, and have been justified by experience. But the fishery interest is capable of still greater expansion ; and, to keep pace with it, the State must make itself acquainted with all its developments, and should almost be prepared to direct its future growth. To maintain its position as the impartial arbiter of the destinies of an industry so vast, and ramifying in so many different directions, the State must have an intimate acquaintance with

Principles of
State relation
to fisheries.

the past history and the present position of every branch of it, and of all interests affecting it or affected by it. As an Austrian writer has said, "The object of fishery legislation, as of all other economical enactments, is to make a lasting and advantageous use of the waters containing valuable food-fishes, and to place this interest in its proper relation to all the other industries. . . . As, according to Roscher, every industry rests on scientific, technical, and economical principles, which are combined for reaching a certain definite practical object, viz. the most advantageous carrying on of this industry, therefore must all economical legislation, with a view to the right adjustment of these, be made on scientific, technical, and economical principles.

"Fishery legislation must have due regard to the teachings of science concerning the nature of fish, their different species, propagation, growth, location, migrations, &c. ; to the teachings of technology concerning the different methods of catching fish, the implements employed, the contrivances

for protecting fish against hurtful influences, &c. ; but no less must it study the principles of political economy, the ways and means of carrying on business in the most advantageous manner . . . It must likewise study the true relation toward each other of all the industries carried on by means of water. . . . Fishery legislation must also have due regard to judicial and administrative considerations ; it must be based on a thorough knowledge of the condition of fisheries in other countries, of the fishery laws of those countries, as well as of the laws and administrative regulations of all branches of industry relating to fishing ; and it must study the manner in which laws are carried out in foreign countries, and the effect of such laws on the fishing interests. . . . From the Government we must, above everything else, expect that it will strictly carry out the laws made for protecting the fisheries. . . . To the Government we must likewise look for those general, far-reaching, and, therefore, successful measures which the fishing interests require from time to time, even where there is a good fishery law."

However good in principle our fishery laws may be, points can hardly fail to arise in which they are capable of modification in detail. On the other hand, the history of the fisheries, both here and in other countries, is a guarantee that occasions will arise when groundless demands for change will have to be resisted. To meet both these contingencies, and to qualify itself for putting into practice the principle of "the greatest good of the greatest number," the State should neglect no opportunity of mastering, through the agency of a duly-qualified department, armed with all needful powers, every detail, natural as well as artificial, of this great industry. Norway and the United States have taken the initiative in thus combining scientific

research with practical administration in a single department, charged with the superintendence of the fishing industries. Without in any way reviving any exploded doctrines of political economy, the State might, by following the example thus set, do much in furtherance—apart entirely from “protection” or “encouragement”—of the fishery interests of the United Kingdom.

THE
RELATIONS OF THE STATE
WITH
FISHERMEN AND FISHERIES,
INCLUDING
ALL MATTERS DEALING WITH THEIR
PROTECTION AND REGULATION.

"*STURIO G. ACCIPENSER.*"—[F. J. TALFOURD CHATER.]

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THE
RELATIONS OF THE STATE
WITH
FISHERMEN AND FISHERIES.

INTRODUCTION.

PUBLIC rights, with their correlative duties, are those which establish a relation between the constituted authorities of the State on the one hand, and the rest of the individual members of the community on the other; and these rights become the subject of legislation less to protect directly private interests than to promote the social development of the realm at large.

The use of sea fisheries falls beneath this class of rights. No one individual has an exclusive property in the sea, except in "oyster beds, &c." (which see, subsequently, herein); it is common to all the subjects equally of the state which borders it; and further than this, when once the three-mile limit of the *mare clausum* has been passed, its enjoyment becomes an international right. By modern International Law the territorial sea extends for three miles from the shore. It is designated the *mare clausum* because it is "closed" to foreigners, and, except by implied or express permission, the right to use these waters

is exclusively enjoyed by the subjects of the adjoining state. Formerly, the width from the shore was limited by the reach of a cannon-shot—*quousque tormenta exploduntur*—(vide Selden ; and Bynkershoek De Dom : Mar : cap. 2) but modern international usage has fixed the distance at a marine league.

The rights which, through the sanction of the State, exist between subject and subject are designated private rights, and are exercised over those things which, unlike the sea, are the ascertainable or more or less exclusive property of particular individuals. An example of this class is the right which a proprietor has to fish in an unnavigable river, where he is protected in its enjoyment, because either in severalty or in connection with others he is himself the owner of the subaqueous soil, or has obtained a grant of fishery rights from those who possess it. This aspect of fisheries does not concern the present subject.

The title to fish when caught is acquired by what in the civil law was called *occupatio*, or, in other words, by the mere taking possession of those things which before did not belong to anybody. English law has borrowed but little from Roman law ; title by occupancy in respect of sea-fish is, however, distinctly acknowledged, and the dictum of Gaius has prevailed to the present day. “Itaque si feram bestiam aut volucrem aut *piscem* ceperimus, quidquid ita captum fuerit, id statim nostrum fit, et eo nostrum esse intellegitur, donec nostra custodia coerceatur : cum vero custodiam nostram evaserit et in naturalem libertatem se receperit rursus occupantis fit” (Gaii Institutiones, lib. ii. § 67).

For these two reasons—the common freedom of the sea and title by occupancy—our State has intervened but

little by legislation to assign or define the rights which may exist amongst those of its subjects (as between themselves) who are engaged upon the fisheries. The regulation of such rights the State has safely entrusted to Usage. From this it is not to be understood that Parliament has legislated but little in regard to sea-fishing. The remainder of this essay will show the contrary, and our Statute Books contain scores of enactments on the subject. In one piece of legislation alone, that of 1868, reference is made to no less than sixty-five previous Fishery Acts.

The main object of this State legislation has been to regulate the fishing community as a class in order that by the maintenance of order and honesty, and the prevention of fish from wanton destruction, the country may be benefited at large. It has seldom interfered to establish the exact rights which one fisherman may have against another for the reasons that the wide extent of the sea, the uncertainty of the property in fish until they are actually caught, and the unwritten regulations which have been established through custom amongst fishermen themselves, have rendered legislative interference less necessary than legislative supervision. In *Fenning v. Grenville* (1 Taunt. 247), Justice Chambre was of opinion that of necessity usage, and not statutory enactments, must in many instances be the only obligatory law regulating the use of deep-sea fisheries, not only as between British subjects and those of other nations, but as between British subjects themselves.

The prosperity of the State and the prosperity of the classes which compose it are mutually dependent on each other ; and, although the legislation regarding fishermen, from being primarily based upon a consideration for the

welfare of the State generally, is provided for them indirectly, it is none the less in fact or in intent promoted for their advantage.

As an example of this, and of the further fact that an artificial stimulus becomes no longer necessary when once a nation has experienced the large profits to be derived from an industry the advantages of which in its infancy were not fully anticipated, the legislation which has related to bounties may here be cited. By enactments of George III. varying bounties, in some cases amounting to £3 a ton on the tonnage of every boat or fishing buss equipped, in others not exceeding £30,000 for the whole year's State outlay, were granted in proportion to fish caught, provided the barrels containing them were branded. In the subsequent reign these bounties were abolished, but the necessity for branding the barrels was retained in certain cases. By the legislation of 1858, so far as Scotland is concerned, a charge of 4*d.* per barrel was authorised to defray the expense of this branding. A consideration of our general legislative policy which is now opposed both to bounties and to loans, because, amongst other reasons, of the difficulty of regulating their distribution in proportion to the actual deserts of those entitled to them, need not here be entered upon. It may, however, be stated that in 1867 such political economists as Mr. J. S. Mill and Professor Fawcett supported a Bill authorising loans to Irish fishermen because "Ireland was a more backward country than either Scotland or England." From the facts, however, preceding the above discursion on the subject of legislative policy in regard to bounties and loans, the rapid progress of the fishing industry during the past century and a half may be accurately gauged. In the first stage an artificial stimulus is found to be held neces-

sary ; in the second there is a cessation of its necessity ; whilst in the third the industry has become not only able to support itself in affluence but to pay something towards the expense of the constituted authorities who supervise it. From the abolition of bounties, which at first were decreased gradually only, the fact also becomes exemplified that fishermen are individually encouraged wherever a stimulus is necessary, but that the encouragement afforded them, either individually or as a class, is subservient to that of the State welfare at large.

A consideration of the opening statements in this essay may, perhaps, induce an accurate perception of the exact place occupied in our legal system by home legislation relating to sea fisheries. In the first place it has been effected for the regulation of public as opposed to private rights ; secondly, it comes beneath that class of public rights which have for their object the commercial and social development of the State ; and thirdly, it exclusively regulates the relations between our State and its own subjects as opposed to that international law of fisheries which has been established by usage or treaties.

A more restricted definition of home legislation is that which distinguishes the legislation affecting England and Wales from that affecting either Scotland or Ireland. It is a matter of comparative ease to keep the sea fishery legislation for Ireland distinct from that which concerns Great Britain, but in order to deal with home legislation in its narrowest sense (as affecting England only) reference to the sea fishery regulations relating to Scotland is in many cases compulsory.

A few descriptive words on British fisheries inserted here may render frequent subsequent allusions more readily understood.

There are five kinds of fisheries :—*

1. Trawling.
2. Drifting.
3. Seaning.
4. Lining, and
5. The use of fixed engines.

The fish caught may, apart from any natural history classification, fall beneath four divisions for commercial purposes.

1. Round fish, such as herrings and mackerel, found near the surface.

2. Flat fish, which live at the bottom of the sea, like soles and turbot.

3. Round fish found at all depths, such as cod and ling.

4. Shell-fish and crustacea, including, *inter alia*, mussels, cockles, crabs, lobsters, oysters, and shrimps.

In Trawling, the net is purse-shaped ; the upper lip (except in the case of the pole-trawl) is extended from right to left by a beam of from 10 to 50 feet ; this is raised about 3 feet from the ground by stirrup-shaped irons at either end, the bases of which rest upon the bottom : the lower lip of the net, edged by a heavy padded rope (rotten, in order to give if a rocky obstacle is encountered), drags slowly in a curve along the ground, and fish of the second class are thus scooped up. They pass into the "cod" where the net continues narrowest for the last few feet of its furthest end, and whence the forward motion of the trawl prevents their return. The length of the whole net varies up to 70 feet according to the breadth of the beam, and it is hauled slowly by ropes and "bridles" connecting the stirrups, or rounded triangle-shaped "trawl heads," with the fishing vessel.

* See, for this classification, Report, 1879, for Parliament.

In Drifting, the nets are each about 60 feet long, and extend, connected consecutively by a surface rope in an aggregate or "fleet," for from one to three miles. These drift with the tide; the upper portion of their width is kept near the surface by floats and buoys on a "back" rope, whilst the remainder hangs like a perpendicular wall for 20 feet beneath the sea. Each net is attached at every few inches by a short rope to the "back" rope, whilst the back rope at every 20 feet is attached by longer ropes called "scizings" (which may be altered in length to raise or lower the back rope beneath the surface as may be desirable) to the surface rope or warp, which extends from the vessel to the farthest net in the "train," and is indicated at intervals by floating kegs or "bowls." Surface fish of the first class, coming in contact with the meshes, force their heads through, and are prevented from returning by the expansion of their gills on the further side. Herodotus in ancient days remarked on the obstinacy which shoal fish display in continuing their course, instead of diverting it, when they meet with an obstacle which at first does not appear to them impenetrable. This pertinacity, which is probably occasioned the leaders of a shoal by the pressure of the myriads in their rear, still stands our unclassical fishermen in good stead.

In Seaning, the single net (scan, scine, Greek *σάγνη*) is attached at one end by a long rope to a boat on the shore. The net having been rowed out to sea, the other end is drawn towards the first in a semicircle, and the fish of any class found in the particular waters circumvented are embosomed in the folds. On the north of Cornwall a complicated variation of this method is applied to the pilchard fishery; on other coasts it is practised on a small scale only, and amongst most of the fishing class ground seaning is

pursued rather as a profitable amusement on "off days," than as a regular means of livelihood, at least in those localities where either trawling or drift-net fishing by means of crews is carried on. In pilchard seining the "huer" from an eminence "cries" (compare "hue and cry") out the position of the approaching shoals. The "seine-net" boat and the "stop-net" boat leave the shore at the same point. The "seine" boat completes three-fourths or more of the circumference of a circle, and meets the "stop-net" boat, which has accomplished the remainder. The nets are then joined. The "stop-net" boat shoots its net and then makes for the shore, that the escape of the fish between the point of junction and the coast may be prevented. The "seine" boat shooting its net circumvents the fish, and, retracing its circle, completes it by meeting the stop-net boat on the shore. The master seiner, in a small boat or "lurker," directs the operations, and the fish remain in the netted area until taken out from day to day as required by the curers. The six "stems" or divisions of St. Ives Bay, together with their use, in turn allotted exclusively to seine fishers, will fall beneath remarks on "principles" of fishery legislation, rather than beneath those merely "descriptive" of the *modus operandi* in fishing.

In Lining, hundreds of hooks, each carefully baited chiefly for carnivorous fish of the third class, are attached individually by a short line, called a "snood," to a main line of a mile or more in length. This is anchored at the further end, and, at intervals, in the sea buoys indicate its course; the other end is fastened in the boat, to which it is from time to time hauled.

The Use of fixed engines little concerns the present subject. These are principally "stow-nets" fixed beneath a boat, or "garths," or "weirs" (the *kydelli* of Art. 33 of

Magna Charta), in estuaries or by the sea. All fish are welcome. Beyond carefully providing the accommodation and selecting its site their hosts display no particular skill or energy in proffering an invitation. These engines are adapted more or less on the principle of easy ingress and impossible egress exemplified in the baited lobster-pot, or the common inland-river eel-trap. There are valid reasons which may not improbably lead legislation to discourage those engines which, like weirs, but unlike lobster-creels or stow-nets, are permanently fixed to the sea-bed. They produce an "unearned increment" to the owner of the grant, irrespective of his skill or of his being a member of the fishing community proper; they are a restriction on the common freedom of the sea-bed; they catch all fish, irrespective of size, without the possibility of returning them otherwise than moribund to the water; and their position on the coast may often render them an inconvenience to the Crown.

The order of the importance of the above fisheries is that in which they have been placed, except that the first two, in addition to being more important than the others, are perhaps of equal consideration. In the first and the third, in trawling and *ground-seining*, one net alone is used, and the working of these (as well as the choice of the locality) requires great skill. In drifting there are many nets, and although much skill is required in shooting and hauling them up, in the water, when the site has once been chosen, they chiefly work themselves. The skill displayed in keeping a herring-boat at the right distance from its drift-nets is the skill of navigation; the skill of the smack in slowly drawing its trawl over a sandy bottom at a regulated pace, and that which it displays in drawing it round the edges of rocks where fish resort, so as to catch the fish without tearing the

net, combines something of the alternately active and meditative sport of the angler in trying holes, with skill in navigation equal to that required by the herring-boat.

In deep-sea lining there is again a much closer analogy to angling, for the principle of hooks and bait, not seen in the other modes of sea-fishing on a large scale, are directly introduced, whilst the fish are assiduously tempted and caught individually, and not in shoals, although they are hauled up collectively. The skill of choosing and fixing the bait is here seen.

The first three classes into which fish have been divided for commercial classification afford the large harvests of the sea. The capture of the fourth class, such as crabs and shrimps, or the careful attention paid to the protection of oyster-beds, and the means of bringing shell-fish to the surface, may be said to bear the same analogy to large-net and long-line fishing as is borne by the assiduous gathering in of the products of a nursery garden to the rough reaping of a large farm.

The legislation of 1868 has divided fishing-boats into three classes: those of 15 tons and upwards; those less than 15 tons navigated otherwise than by oars only; and, lastly, those navigated by oars alone. The chief trawlers and smacks, usually cutter-rigged, and herring and mackerel-boats, with their lug-sails, belong to the first class. Boats carrying small trawls and shrimpers belong to the second, whilst row-boats are sufficient to tend fixed instruments, and in some cases to manage line-fishing on a small scale.

For convenience of treatment the subject of this essay generally will, perhaps, come beneath a fourfold division.

Reference will first be made to the home legislation which, besides regulating the relations of the State with

fishermen, concerns fishing vessels and the other implements of a fisherman's calling : next to the *locus in quo*, or the fisheries where the industry is plied, and here the regulations affecting the protection of spawning-beds can be dealt with.

Thirdly, those salt-water fish over which the right of capture is most frequently exercised, and their close times, where they exist, will deserve a few remarks ; and, lastly, other matters which concern the protection and regulations affecting the subject generally will be treated of.

CHAPTER I.

A CARDINAL point on which modern legislation affecting sea fishermen hinges is the Fisheries Act of 1868 (31 & 32 Vict., c. 45). Its objects were to give effect to a Convention into which this country and France had entered, and to amend generally our sea fishery laws.

The first of its objects does not directly concern the present subject, but falls properly beneath an essay on the International Law of Fisheries.

Since, however, many of the articles of the Convention are incorporated in the clauses of the Act for the express purpose of regulating the relations of the British State with British fishermen, and as the common-sense and untechnical language of this Treaty clearly indicate throughout the main principles which must underlie the relations borne by any State to its own fishermen, the Convention itself is worthy of careful consideration. In addition to containing the text of the Convention, the Act itself, by repealing either wholly or in part more than sixty previous statutes,

has thus established an epoch at which our sea fishery laws have somewhat approached codification.

For the present purpose it is sufficient to watch its operation on British fishermen only, and under this term are included the catchers "of all fish found in the sea, with the exception of salmon."

By this Act the fishing class becomes further than before regulated by Orders which may from time to time be issued by Her Majesty in Council, and it is thus rendered subject to Sea Fishery Officers. These officers are either those appointed for the express purpose by the Board of Trade, or Commissioned officers of Her Majesty's Ships, Customs Collectors, Inspectors of the Coast Guard, or other authorised persons. By them fishermen may be compelled to produce their official papers on demand, to give all necessary explanations thereof, and, when it is necessary to discover offenders against the fishery regulations, the whole crew of a boat may be mustered. Suspected offenders may be taken to the nearest port without warrant, and they may be detained there until the offence has been adjudicated upon.

To prevent disorder, and the injury which might be occasioned each other by fishermen, boats are not allowed to anchor between sunset and sunrise on grounds where drift-net fishing is actually going on; and fishermen committing assaults or occasioning loss are, in addition to the enforcement of compensation, liable to penalties not exceeding £50, or to three months' imprisonment.

Owners not carrying with them their certificates of registration are liable to arrest, and their respective crews are restrained generally from interfering with each other's operations.

With regard to their vessels, fishing-boats are deemed

to be "ships" within the meaning of any act relating to offences committed on board a ship, whilst under the term fishing-boat is included every vessel, of whatever size, and however propelled, used for the business of a sea fisherman. They must (*under the Act of 1868*) carry on their masts two lights, placed over each other three feet apart, and these must burn all the time that the boat's drift-nets are in the sea between sunset and sunrise.

Trawlers are not permitted within three miles of the fishing ground of a drift-net vessel, nor may a decked-boat shoot its nets within a quarter of a mile of an undecked boat.

Fishing vessels must be registered, lettered, numbered, and conspicuously named; in default they are not entitled to any of the privileges of the Act, although they continue subject to its liabilities.

The letters, which are usually the first and the last of the name of the port of registration, must be at least ten inches in depth on boats under fifteen tons, and not less than eighteen inches on those over that tonnage.

The fact may here be noted, that until 1880 the question of fishing-boat lights required fresh legislation. The Merchant Shipping Act of 1862 directed fishing vessels to carry one "bright white light," and no others. The Fisheries Act of 1868 required two perpendicular lights. An Act of 1875 declared that the Fisheries Act of 1868 should alter no regulations in the Merchant Shipping Act of 1862. The Merchant Shipping Act of 1862 therefore appeared to be the main Act regulating fishing lights: but these vicissitudes of legislation occasioned much confusion in the understanding of the ordinary fisherman.

An Order in Council of 14th August, 1879, altered certain of the provisions in regard to lights contained in the

Act of 1868. By article 10 of this Order open fishing-boats under way, instead of carrying the side lights required on other ships, must exhibit on approaching vessels a green and red globular lantern. A fishing vessel at anchor must show a bright white light, and, when drift-net fishing two red lights vertically on the mast. Trawlers at work, in addition to side lights, must carry a red and also a green light vertically, or else a lantern with a red and green glass.

Publicists at one time held that fishing vessels, in consideration of the necessity and industry of fishermen, were exempt from seizure in time of war. Now that sea fishing has become a national and commercial industry, as opposed to that which formerly supplied subsistence and articles of first necessity alone to those who plied it (without a profit beyond to owners, contractors, and others) the position has become untenable, and it has been abandoned.

Nets are now totally unrestricted as to the size of their meshes, and as to their form and the mode of their use. The enactments of 1843 (6 & 7 Vict. c. 79), whereby herring-nets were not to exceed one inch from knot to knot, nor mackerel-nets an inch and one-sixth, were finally repealed in 1868.

Except by mutual consent, and unless it be found impossible to clear them by other means, nets which have fouled others may not be cut; and they may not be used as an anchorage for boats, nor lifted by others than their owners.

It is illegal to *fix* any nets where drift-nets are floating, and when found lost at sea they are at once to be taken to the Receiver of Wreck.

Sails, buoys, floats and other principal implements, must be marked with the letters of the boat to which they belong;

and signals are regulated, like lights, on the same principles as those contained in the Merchant Shipping Acts.

The Act of 1843 (the 6 & 7 Vict. c. 79 before referred to) was in its main principles repeated by the Act of 1868, which repealed it. Its objects were similar, and its intention was to preserve peace and good order amongst fishermen generally, and to carry into effect the Anglo-French Convention previously signed by Lord Aberdeen and M. Stc Aulaise. The numerous restrictions on the size of nets and meshes were, as before stated, not repeated but repealed ; nor was the enactment that British trawlers, by carrying at the masthead a red vane, should be distinguished from British drift-boats, whose vanes were to be of red and white. The distinction made by this legislation between "weaker" and "stronger" boats is worthy of note, and also the fact that the former because "more exposed to bad weather," were allowed recourse to otherwise prohibited ports.

So far as the jurisdiction of British courts over French subjects is concerned, the convention embodied in the Act of 1843, and not the Convention embodied in the Act of 1868, now prevails. The latter Convention was not to take effect until a fixed day, but the day was never subsequently fixed (although the first Convention ceased before 1868), and until 1875 the British courts had no jurisdiction under either Convention. (Parliamentary Blue Book. Messrs. Buckland and Walpole's "English and Welsh Sea Fisheries Report," 1879, p. xxx.) In 1875, however, the first Convention was revived. These facts must be noted in this essay for two reasons, firstly to show that the Fisheries Act of 1868 is far more a piece of home legislation than one of international importance ; and secondly to make clear the fact that although the Act of 1868 repealed

the Act of 1843, the Convention embodied in the Act of 1843 has greater validity than that embodied in the Act of 1868.

Reference must next be made to certain legislation which was in part expressly left unrepealed by the Sea Fisheries Act of 1868.

During the Stuart period fishermen had been subject to exactions imposed by the lords of the manor and others in the form of top-money, of stallage for the use of markets by the sea, of allowances of fish, such as the species of heriot called Saturday night's fishing, with other gratuities. In the reign of Anne these restrictions were removed, and in 1756, because the improvement of the British fishery was still retarded by similar impediments, the legislation of Queen Anne's reign was confirmed, and it was enacted that all inhabitants of Great Britain should have power to take and cure without hindrance herring, cod, ling, and other white fish from the seas and bays of Scotland; whilst persons receiving gratuities for according their permission to fish were liable to penalties recoverable either at Westminster or in the Exchequer Court of Scotland. These principles of free fishing, and the infliction of penalties on those who prevented it were confirmed by the Act of 1868. (See its second schedule, and sections 1 and 17 of 29 Geo. II. c. 23.)

In 1761 the metropolis futilely struggled with a difficulty which a hundred and twenty two years have not succeeded in removing. An Act was then passed "for the better supplying the cities of London and Westminster with fish, to reduce the present exorbitant price thereof, and to protect and encourage fishermen." An ancillary object of this statute was to prevent forestalling. When it is remembered that to forestall is to buy up commodities on their way

to market, or to dissuade persons from bringing their goods there, or to enhance the price of goods when they arrive, it will be perceived how far the object has been attained. At that time the "East End of London" did not exist, as a reference to Rocque's map* of 1745 may inferentially show. London ended where the Great Eastern Railway Station, the present chief fish-traffic terminus of our railway system now stands.† Kingsland and Finsbury were fields, Bethnal-green was in reality verdant, and along the Thames, east of Billingsgate, the population was meagre and scattered. In 1761 Parliament perceived that an article of food which might readily be rendered cheap, was denied to hundreds of the starving poor because "fore-stalling" and artificial expenses removed it from their consumption. Parliament, in 1883, is none the less alive to the claims for a cheap fish supply which may be advanced now by the poor, not in their hundreds but in their thousands. It is to be hoped that in the future a prudent consideration of the best means to be adopted in order to ensure success will occasion the only delay in acceding to the urgent demand for a cheap supply of fish. That portion of the eighteenth century Fish Supply Act which gives facilities to the transit of fish, as by permitting fish-carriages to travel to and from the markets on Sundays and holidays, was left intact in 1868. The remainder, including the enactments which exempted fishermen from impressment for the navy, was repealed, whilst the abolition of press-gangs

* Rocque's Map is referred to in an article in the 'Gentleman's Magazine,' April, 1883.

† Of 88,000 tons of land-borne fish—as distinguished from water-borne fish which arrives at Billingsgate—brought to London in 1881, no less than 57,000 tons were carried by two railway lines alone—the Great Northern and the Great Eastern.

and other reasons have rendered its continuance in other respects unnecessary. The fact, however, that at a time when England was acquiring her naval supremacy, and was displaying vast energy in perfecting her fleets, the privilege of exemption from compulsory service should have been accorded a particular seafaring class must not be omitted from consideration, since it indicates a prominent feature in the relationship of the State with Fishermen during the past and present centuries. It has previously been stated, that the interests of fishermen are generally subservient to those of the State at large. Regarded from one point of view, their exemption from naval service will show their individual interests to have been, in one case at least, paramount to those of the State. As a fact, the British State has long perceived that the *maritime* prosperity of an island is almost as dependent on its fisheries for development as it is on its naval forces for security (2 Geo. III. c. 15.)

So much of the sea-fishery legislation of 1771 as confirms to fishermen the free use of the British seas, of unartificial ports, and of adjacent waste land for the erection of huts and landing-stages, remains unrepealed ; whilst the liability to a 100*l.* penalty, equally divisible between the Crown and the informer, of persons demanding dues for such use within certain limits continues. (See 2nd Schedule of Sea-Fisheries Act, 1868, and sects. 11–13 of 11 Geo. III. c. 31.)

It is doubtful whether in any case for the furtherance of fishing a fisherman can have a general right at common law to use waste land within a few hundred yards of the sea for the purpose of drying his nets ; but in some cases, apart from any express grant, the uninterrupted user of the land of others for that purpose has ripened into a right by prescription. By statute-law, on the other hand

(by sect. 11 of 11 Geo. III. c. 31, expressly left unrepealed in 1868), fishermen, in addition to the use of unartificial harbours below high-water mark, are permitted the free use of waste ground for one hundred yards above, for the purpose of drying their nets.

In 1786 (by sect. 19 of 26 Geo. III. c. 81) the same unimpeded right to exercise certain otherwise restricted trades, as had previously been permitted to soldiers after their discharge from honourable service, was extended to fishermen of seven years' standing. Lest there should still remain any trade restrictions of the particular class referred to which might be an impediment to the following of a fisherman's calling, this privilege was particularly left undisturbed in 1868.

An Act relating to the British Society, so far as it is consistent with the altered circumstances of the case, remains unaffected. The above company had been established for the extension of fisheries, and for the purchase of land on which to erect fishing-stations in Scotland. In 1799 (39 Geo. III. c. 100) Parliament granted it express powers to devote a portion of its capital to the grant of loans for the erection of houses by deserving fishermen, and for building net and hemp factories. It was also enabled, in the pursuit of an object, the importance of which by the end of last century our Legislature had become fully prepared to acknowledge, to award prizes for expertness in fishing, in fish-curing, in net-making, and in the preparation of fish-oils. The British Society thus became in some respects the precursor of the International Fisheries Exhibition of 1883.

In 1808 certain British White Herring Fishery Commissioners were appointed (48 Geo. III. c. 110). The powers given this Board, with some additions and altera-

tions, have continued exercisable in Scotland, and in that respect they were not very materially affected in 1868. Their principal duties are to inspect the methods of curing ; to place, when requested, a Government brand showing the quality on barrels of herrings ; to enforce the registration of boats ; to maintain order on the fishing-grounds ; to lay out grants for the improvement of fishermen's harbours ; and to prepare annual statistics. Although affecting Scotland only, three reasons will justify allusion being here made to this Act. One reason is that it will be useful to note that our modern legislative policy, by confining the quality brands to Scotland, showed itself averse to the extension of the grant of Government certificates of excellence, in the form of brands on British fish, in order to increase their sale in foreign markets ; another, that for estimating their quality, most drift-net fish are divided into three classes : those which are " full " of roe ; those which have not yet developed roe, commonly called " maties " (perhaps from Dutch *maatje*, a small measure, indicating the form and size of the undeveloped germs of roe) ; and, lastly, those which are " shotten," or whose roe is gone. A remaining reason is that the word " British," as applied to the Scotch Fishery Board, indicates the fact that, at an earlier period, the practice of branding, now abolished, prevailed in England.*

It may here again be pointed out that, whereas it is easy to write separately of the Sea Fishery Legislation affecting Great Britain as opposed to that affecting Ireland, the natural custom of mutually fishing off the coasts of their respective districts which obtains amongst both Scotch and English fishermen renders it in many cases impossible to

* In 1876 the Irish inspectors very distinctly recommended that the Scotch system of branding should not be extended to Ireland.

speak of English sea fishery legislation as distinct from legislation for Scotland on the same subject.

It may be well also to remember that the main principles affecting the United Kingdom are the same throughout, and that distinct legislation for distinct portions of it in no case has for its object the variation of the principles themselves. The only variation consists in the difference in the means used for producing for the same principles their intended result ; and these means necessarily vary according to the different necessities of different districts.

There is a principle that boats must render their identity readily discernible, and for this reason they are registered and lettered. If in Scotland a Fishery Board long supervised registration, it is unnecessary for the mere sake of uniformity to transfer that duty to the collectors of customs, who, in England, undertake similar supervision.

Again, there is a principle that immature fish should not be unnecessarily destroyed. The unintentionally iniquitous legislation of 1860 enforced a five months' close time for herrings on the West of Scotland. The ostensible object of this Act, before its promotion was detected to be a mere trade scheme, had in view the worthy desire to enable small fish to reach the Minch, where they might thrive undisturbed and attain full size. The Act of 1843, in order to protect small fish in the deep sea off the English coast, restricted the size of meshes. Both restrictions have been abolished (with the exception of an unenforced close time in the territorial waters below Ardnamurchan), but both endeavoured to promote the same principle by means varied in different localities. In the land-locked bays of Scotland and the inland seas of the Hebrides it was thought feasible to directly arrest the fishermen themselves when they plied their calling in close time ; but to check

the destruction of immature herrings on the wide expanse of the North Sea, an indirect method by the seizure of small-meshed nets when landed at the quays, or hung on the shore to dry, was held more practicable.

There is, again, in addition to many others, the principle that fishermen must not unnecessarily interfere with each other's operations. In the deep seas it is deemed sufficient to prohibit trawlers, for instance, from fishing within three miles of drift-nets, lest the latter should become entangled or cut through. In St. Ives Bay, on the other hand, particular legislation (3 & 4 Vict. c.—confirmed by the 68th section of the Sea Fisheries Act, 1868) gives to sean fishermen the exclusive use of the coast waters. This privilege has been considered necessary to the pilchard fishery; but, as it may probably be considered too unimpeded to be just to other fishermen, it will perhaps become more limited by legislation, unless it can be shown essential to the advantage of the whole district.

The Act of 1868 also expressly leaves in force, so far as it relates to Scotland, the greater portion of an Act of 1815 (55 Geo. III. c. 94). By the latter Act a legal element was introduced into the constitution of the Fishery Board, and the Advocate- and Solicitor-General for Scotland were added to the number of the Commissioners. These were thenceforth to report annually to the Board of Trustees for Fisheries and Manufactures before each 1st day of November, and a copy of their Report was to be laid before both Houses of Parliament within fourteen days of the commencement of each session. In these enactments another proof, by reason of their classification with manufactures, of the further growth of the recognition of Fisheries as a large national industry is given; and by the submission to Parliament of annual Reports, evidence

is afforded of the ever-increasing interest taken in fishermen by the State. The Admiralty was authorised to appoint a superintendent of coast-fishing, who might seize nets of illegal size and those used on a Sunday. Imperfect barrels might be seized by the fishery officers, or by those of the excise or customs ; and the Commissioners were to regulate the cran as the standard fish measure. Herrings were to be gutted within twenty-four hours of their capture, whilst the remainder of the Act is principally concerned with the now obsolete questions of "*bounty money*" and the quantity and kind of "*salt*" to be shipped.

Of the Act of 1821 (1 & 2 Geo. IV. c. 79) three sections were permitted to survive so far as they affected Scotland ; the constitution of the Commissioners was confirmed ; and they were empowered to make from time to time fresh regulations, and to insure the forfeiture of unjust measures.

The greater part of the legislation of 1824 (5 Geo. IV. c. 64) remains unrepealed, but as its object was to further ensure the abolition of Bounty-money, reference to it is here unnecessary.

The legislation of 1830 (11 Geo. IV. and 1 Will. IV. c. 54), so far as it related to England was repealed in 1868. Its principal effect on Scotland is to further authorise the branding of herrings, and to extend the powers of the Commissioners over the fishery for "round fish," such as cod and ling. This class of fish, as before mentioned, is not caught by drift-nets, but is either incidentally found in trawls, or is systematically fished for with hooks and lines. The rest of the Act regulates the appointment of Fishery Officers for Ireland.

Two sections only of the Act of 1851 (14 & 15 Vict. c. 26) were repealed in 1868. The chief objects of this Act

were to give a preference to drift-net fishermen over trawlers, and to prohibit the use of trawl-nets. After a consideration of the fact that the policy of Modern Fishery Legislation is to give the greatest possible latitude consistent with the preservation of fish from wanton destruction to all methods of fishing, it is unnecessary to state that the trawl-net restriction regulations are contained in the repealed portion. The remainder of the Act enables the Commissioners to brand herrings at any time within fifteen days of salting, and it removes the restriction which previously compelled, in certain cases, the use of "great salt" only. Additional facts to be noted are, that the fourth-cran was established as the smallest legal measure for fish, and that penalties were to be recovered either in the name of the Secretary of the Board of Trade, or by a Sea Fishery Officer.

In the repealed portion of the Act of 1860 (23 & 24 Vict. c. 92), the restriction on use of nets, other than drift-nets, was further enforced, and also the close time on the *whole* West Coast of Scotland, elsewhere alluded to. The noteworthy features in the remainder are the close time below Ardnamurchan, and the authority given the Commissioners to appoint a superintendent, who has all necessary powers, with the exception of inspecting the curing and branding of fish, whilst those who obstruct him become liable to a penalty of £50, or to sixty days' imprisonment.

The Sea Fisheries Act of 1868 also leaves unrepealed five sections of a short Act for Scotland passed in 1861 (24 & 25 Vict. c. 72). By this a penalty extending to £20 is imposed on persons in the possession of herrings during the close time for the West Coast of Scotland. In addition, boats, nets, creels, boxes, or other articles containing the fish, become liable to forfeiture, and the *onus probandi* that

the fish were not illegally taken is thrown on the possessor. Previous legislation made a close time for the East Coast of Scotland, which the Act of 1861 confirms, with the exception that the Commissioners were authorised to suspend the close time in the Firth of Forth west of Queensferry Pier, in order to permit Sprat Fishing. The reference to close time, with the exception of that on the lower half of the West Scotch Coast has become now a matter of historical interest only.

In 1865 (by 28 & 29 Vict. c. 22) the close time on the West of Scotland was reduced by one month, and it is interesting to observe that this legislation was left unrepealed by the Fisheries Act of 1868, so far as it is inconsistent with that legislation. This, on the whole, is unfavourable to any close time at all, and, in fact, outside territorial waters distinctly forbids it, except so far as oysters are concerned.

Hitherto reference has been made to some legislation which has to a limited extent been expressly left unrepealed by the Fisheries Act of 1868:

Having taken this Act as the anchor of our modern law of Sea Fisheries, other concurrent legislation attached to and floating round it will be next considered.

The legislation of 1771, which confirmed to fishermen their present exemption from dues for the use of unartificial harbours and waste land, and their exemption from forced service in the Navy, granted in the London and Westminster Fish Supply Act of 1762, have both been considered. An Act of 1810 (50 Geo. III. c. 108) recites that "it hath been found" (since the Act of 1762) "that various sorts of fish retire in the winter season into deeper water," and that this being the case, larger boats with larger crews had been found necessary to follow them. For this reason

a larger proportion of each crew, including besides regular hands, "fishing landmen," was exempted from forced service, and commanders of press-gangs became liable to a penalty of £20 for impressing exempted fishermen. Their freedom from press-gangs, now a subject of antiquarian interest only, and the ichthyological discovery made by Parliament in 1810 are not matters of importance for this essay. The vast importance of sea-temperatures and the migration of fish, both of which materially affect the Fishing Industry, would fall beneath an Essay on the Natural History of Fish, and not in one showing the relation of the State to Fisheries. The quaint manner in which a natural history fact was announced by Parliament in 1810, may doubtless have amused the late Mr. Buckland, if ever he read the Act, the latter portion of which, however, contains provisions of present use. By these enactments penalties are imposed for the breach of contracts for fishing voyages, and for hiring or enticing apprentices from fishing vessels. Magistrates, besides determining difficulties between masters and men generally, are to issue warrants for the arrest of absconding hands, who, under this Act, become liable to a £5 penalty : and all ship-captains and others harbouring contracted fishermen become liable to a penalty of £20. The prosecution must be within three months, whilst the penalty was equally divisible between the prosecutor, and, at that time, Greenwich Hospital. The latter moiety reads somewhat like a small *quid pro quo* for exemption from press-gangs.

In 1854 the Principal Merchant Shipping Act was passed, and in 1862 it was amended by another. By section 13 of the Act of 1862, fishing boats are subjected to the operation of the whole of the third part of the Act of 1854, with the exception of twenty-eight of its sections. The re-

maining hundred and fifty-two (found *passim* between 109 and 290 of 17 & 18 Vict. c. 104) relate to the certificates, apprenticeships, and engagements of seamen (and fishermen); to the allotment, remittances, recovery of and right to wages; to leaving hands at foreign ports, to their discharge, and to volunteering into the Navy: regulations are also made concerning their food, health, accommodation, and causes of complaint, whilst discipline and crimes at sea are dealt with generally. A perusal of the above provisions of the Shipping Acts is important, as it exemplifies the sanction which State Legislation affords the relation of master and servant on registered sea-going ships, although employed exclusively in fishing off the coasts of the United Kingdom.

It will be observed that the mere fact of registration in many instances brings fishing vessels within the operation of the Merchant Shipping Acts. As another instance of this, by the Shipping Act of 1873 (36 & 37 Vict. c. 86), agreements with "seamen fishing off the coasts of the United Kingdom" have been authorised where the remuneration consists in a share of the profits alone.

The system of payment by shares is very frequent in our fisheries. Few industries require so much the personal interest of each individual employed. The whole business is more or less speculative; there are occasionally large and successive prizes in the form of "miraculous draughts," whilst large blanks may still more readily be drawn. To attempt to secure the former the alacrity of each fisherman must be aroused, whilst, in the event of the latter, by means of payment by share, and not by wage only, the loss is less heavily felt by those whose capital has been invested in the equipment of the boat. Large fishing companies in Ireland and elsewhere, paying mostly by wage alone, have signally

failed, whilst concurrent private enterprises have reaped fair harvests. Mr. Aloysius Blake, in his Parliamentary Report of 1870, says, at page 31 : "There is no industry which requires closer attention to make it pay ; unless those engaged in it have a positive interest in every fish captured, and in the saving of expenditure, success cannot be looked for." Payment by dole has in addition an elevating tendency. It removes a fisherman from the bare position of a journeyman to one akin to that of a master trader, and opens up to the industrious and lucky the ambition of becoming boatowners. After a good fishing, enough is frequently saved to enable a fisherman to buy a plot of land, and in a subsequent year to erect his cottage. The speculative element in the fishing industry does not injuriously affect the lower orders with the malice of that in a gambling concern. This arises from the fact that English crew-fishermen, amongst whom the very frequent custom of the Scotch does not extensively prevail, have not necessarily, although paid by share, invested, apart from their labour, a share in the capital of the boat and nets. After a bad season their loss consists in not gaining, not in the loss of a disbursement. The independence and prosperity of this class of fishermen may particularly be observed amongst the coast peasantry of Suffolk and Norfolk. Landsmen engaged in the fishery, principally in hauling up nets at the capstan, together with more regular hands, return with their share-money to the villages and to farm work, so that deriving profits from more than one harvest in the year, they become little affected by times of agricultural depression.

Section 8 of the Act of 1873 enables the master of a fishing vessel to agree that any person employed shall be wholly remunerated by a share in the fishing adventure.

The agreement is to be in writing, signed by the contracting parties in the presence of the superintendent of a mercantile marine office, and it is to be explained by him and attested. This agreement is, moreover, to be valid, notwithstanding section 182 of the Merchant Shipping Act of 1854. This section was to the effect that no seaman should by any agreement forfeit his lien for wages upon the ship, as by the loss of the vessel in part.

A Sea Fisheries Act of little importance to fisheries other than those relating to oysters, was passed in 1875 (38 & 39 Vict. c. 15). This Act will be further mentioned when spawning-beds are subsequently considered. It may be referred to here, since it indicates the continuing centralisation of all sea fisheries beneath the control of the Board of Trade. This position, besides giving sea fisheries increasing importance as a national industry, places them directly beneath the immediate investigation of Parliament itself.

By the Customs Consolidation Act of 1876 (39 & 40 Vict. c. 36, sect. 48), "No goods, except diamonds, bullion, lobsters, and fresh fish of British taking and imported in British ships, which may be landed without report or entry," are permitted ashore except at fixed hours and under supervision. The valuable companionship with diamonds and bullion, in which fresh fish and lobsters accidentally find themselves placed, is of no particular significance; but their express exemption from the delay occasioned by reports and entries in official registers, exhibits an important confirmation of the privileges granted to the fishing trade in the Act of 1868.

The legislation of 1877 (40 & 41 Vict. c. 65) had a direct influence on a certain kind of sea fishing. Miners and others who could readily obtain small quantities of the

dynamite and gun-cotton used by them on shore for blasting, had been in the habit of catching fish by exploding such substances at sea. For one fish caught for food in this way, a hundred were wantonly destroyed, and neighbouring nets and vessels were rendered insecure. In 1877, fish and fishing-boats became nearly as amply protected against dynamite as public buildings then were. By the Dynamite-fishing Act, all persons using explosive substances for catching fish in public fisheries become liable to a fine of £20, or to imprisonment for two months.* Such offences committed on the coast, or at sea within three miles, are deemed committed within a public fishery, and, for purposes of jurisdiction, they are held to have been committed on the land adjoining such sea. The prompt Explosives Act of the present Session, aimed against grosser malefactors than dynamite-fishers, might possibly occasion even the latter greater severity. By the Act passed this April (*i.e.* April 1883), the mere possession of explosives may render the possessor liable to fourteen years' penal servitude. Mr. Stansfeld, in the House of Commons, argued against the punishment, as it might render liable a land-poacher with an ounce of gunpowder. This is possibly the case, and the penal servitude under the Explosives Act might therefore, with greater possibility, be used against a sea-poacher in possession of an ounce of dynamite.

The rating of fishermen was regulated in 1880. In the Merchant Service, a seaman to be rated A.B. must have served four years before the mast (43 & 44 Vict. c. 17, s. 7). Fishermen who have been employed for three years or longer in a registered decked fishing vessel may be

* The Dynamite Act, 1877, is distinctly a Sea Fishery Act, as it was not extended to rivers until 1878 (by 41 & 42 Vict. c. 39).

reckoned A.B. if, in addition, they serve for one year only in a trading vessel. The proof of service consists in certificates of discharge, whilst, in order to cast no pecuniary impediment in the way of fishermen, the fee for a certificate, if the proof has to be supplied by the Registrar-General of Shipping, must not in any case exceed sixpence. The above is a practical recognition of the fact that our fisheries are a "fruitful nursery of able seamen" for the Navy and Mercantile Marine.

When the Sea Fishery Laws received further amendment in 1881 (44 Vict. c. 11), clam and bait beds received protection, and a restriction was placed on one class of fishermen for the benefit of another class, who fished with hook and line. The Board of Trade was empowered to prohibit the use of beam-trawls in the territorial seas, wherever it could be shown to be injurious to clam or bait beds ; but the orders, when made, do not take effect until they have been confirmed by Parliament.

In the preceding will be found an outline of the relations borne by the State to fishermen : it is intended next to speak very briefly of the *locus in quo* of the fisherman's labours, and then more fully of the legislation which protects spawning-beds.

CHAPTER II.

THE principal English ports which equip large fishing boats are those of the East Coast, washed by the North Sea. The chief in order of importance are Yarmouth, Grimsby, Hull, Lowestoft, and Scarborough, whose boats of the first class, over 15 tons, range in number from 550 to 120 respectively.

On the South Coast, Dover, Rye, Teignmouth, and Brixham are fishing ports on a smaller scale. The fishermen along the rest of this coast generally work with their families to obtain a livelihood rather by individual enterprise than by joining the crews of owners. Their boats consequently are chiefly those of the second and third classes, and are under 15 tons. Intermediate between fishing singly and fishing in large crews, is the Cornish sean-net fishery. The staple fishery of this locality, as before mentioned, is for pilchards, which are probably the full-grown Bay of Biscay sardines, in the same way that conversely Thames whitebait are the fry of North Sea herrings.

On the Welsh and north-west English Coast the chief fishing stations are Swansea, Abercystwith, Bangor, Liverpool, and Morecambe, the last-named place being chiefly interested in the mussel fishery.

The inexhaustible mine of British fisheries is the North Sea.

Within its extent—600 miles in length, with a maximum breadth of 350 miles—are the chief British and International fishing and spawning grounds ; whilst the estuaries of the Thames, Tyne, Tay, and other rivers on its west, and of Continental rivers, like the Elbe, Rhine, and Scheldt, on its east, afford nurseries for shell-fish and fry on either side.

Mr. Olsen, in his 'Fisherman's Practical Navigator,' enumerates thirty-five North Sea fishing-grounds. Amongst them are the Little Silver Pits, seven leagues east of the Humber, and a winter resort of soles ; the North-east Hole off Cromer ; and most important the Dogger Bank, commencing off Flamborough and running to Jutland. This affords a summer resort to plaice, haddock, and cod ;

whilst drift-net fishing is carried on in the North Sea generally.

In the English Channel the chief fishing grounds are the Ridge and the Varne off Dover, Rye and Teignmouth Bays, and the waters by Brixham and off the Cornish coast. Trawling and drifting are carried on in the Irish Channel from the Welsh ports before mentioned. Tenby adjoins a large trawling ground, and the sea off St. David's Head will probably form a successful ground in the future.

The Isle of Man alone possesses more than 230 boats of the first class, and this fact in itself affords a proof that the fishing grounds in the surrounding waters are numerous.

Although a fishing ground is not necessarily a spawning ground, it is obvious that those parts of the sea are most fished which are *believed* to contain the most fish, and the most fish will naturally be found near spawning grounds. Little, however, is known of the exact locality of spawning grounds, and it is probable that many of them vary in situation from year to year. The knowledge of the site both of fishing ground and spawning ground is acquired by experience alone; and experimental knowledge increases very slowly amongst fishermen. Directed by prudence, they naturally prefer using the same known grounds year after year to the risk of seeking entirely new ones, although it is of course possible that many localities much more profitable than any of those known may exist. When more is understood of the migration of fishes, it is possible that bad seasons may be entirely prevented by learning how to follow the fish systematically from place to place. Shoal-fish are already followed round the coast, but our whole system of fishing may be said to consist more in passively waiting for fish on their presumed grounds than in actively hunting them down.

A distinction may be drawn between spawning grounds and spawning beds. The former would include all those vast and indefinable spaces where fish instinctively breed, and the latter those limited portions of the sea which have been artificially established for fish propagation. Examples of spawning grounds would be the districts between Egmont in Holland and the entrance to the Cattegat, where it is believed soles breed ; the district between Specton Cliffs and Robin Hood's Bay off Yorkshire ; and the rocky pits scattered through the North and other Seas surrounding the United Kingdom.

Spawning beds may be exemplified by the small portions of districts near the coast or in estuaries which, under the Third Part of the Sea Fisheries Act of 1868, or by other enactments, may be allotted by the Board of Trade to private individuals, and which are principally devoted to the rearing of oysters.

Intermediate between spawning grounds and spawning beds are a third class of spawning spaces, which are near the shore or partially enclosed by headlands, but which are not artificially managed. Swansea Bay and numerous other bays in which fish spawn, but which legislation is almost powerless to directly protect, are instances of this class. The exceptional enactments affecting St. Ives' Bay must not be considered as in protection of a spawning place of fish, but only as regulating the use of a resort of pilchards.

From these considerations the threefold division of spawning fields into—1, Spawning grounds ; 2, Spawning places ; and 3, Spawning beds—is reached.

The limits of the first are most imperfectly known, and for this reason alone legislation can do nothing directly for them. British legislation could not with any substantial

result restrain British fishermen from fishing on certain spawning grounds, whilst foreigners remained unimpeded by their own laws, even if the now almost disproved supposition were admitted, that any fishing, however incessant, could materially lessen the vast resources of the deep seas. The only methods, and these are indirect, by which legislation can protect spawning grounds, are either by insisting (a) on the general use of large meshes which will allow the escape of spawn and fry; or (b) on the prohibition of beam-trawls where spawn may be disturbed or fry destroyed; or (c) on close times which may enable spawn and fry to fully develop. It has been before shown that nearly all such restrictions have been removed owing to the futility of all endeavours to successfully enforce them. The enactment of 1868, which prohibits the use of oyster-dredges in the English Channel between the 16th of June and the 31st of August, must be regarded as affording indirectly a close time for that particular class of fish known as oysters, and not as protecting the spawning ground of fish generally.

Spawning places, from being within the territorial seas, and from possessing more definable limits than spawning grounds, might more readily become the successful subject of legislation. With the exception of those spawning places, principally in estuaries, which have been converted into spawning beds, they have not been more directly protected than the first class. The unenforced close time for herrings below Ardnamurchan in the territorial seas would come nearest as an example of protection, except that by this restriction immature fish are more protected than spawn. The suggested abolition of the early spring fishing of the East Coast would also protect large fry rather than spawn, whilst its operation would extend to the spawning grounds of the deep sea as well as to the spawning

places in territorial waters. This prohibition is unlikely to be effected, since at the port of Lowestoft alone over £20,000 is put into circulation every spring through the sale to the Dutch and French fishermen of young herrings, as long-line bait for halibut and turbot. The Board of Trade, as before stated, may, by 44 Vict. c. 11, prohibit the use of beam-trawls wherever they are injurious to clam-beds in territorial waters, and this constitutes almost the only direct protection afforded spawning places of the second class.

Spawning beds, or the pisciculture plots originated or continued by the permission of the Board of Trade, are the direct result of enactments or a Crown Grant. For these reasons they readily become the subject of such legislation as can materially affect the relationship of the State with fishermen. In the same way that weirs have in some instances been permitted to individuals for the destruction of fish on the coast or in estuaries, in certain similar places plots have more recently been assigned for fish-culture and the protection of spawn. The chief deep-sea oyster-beds are those in the Channel and those off Grimsby, whilst important oyster-beds within the territorial waters have long been established off Portland, Falmouth, and Whitstable, and in the Solent and Milford Haven.

In 1778 (18 Geo. III. c. 33) an Act was passed for the better protection of fish in the Severn and Verniew. This enactment is now a matter of historical interest, but so far as it related to the estuaries of the rivers defined, it may be here referred to as an early endeavour towards the protection of spawning beds. At the commencement of the present century the estuaries of the Teign and Plym were similarly protected. The protection extended chiefly to salmon; for this reason its consideration may be dis-

missed in the same way as the protection under the Scotch Act of 1828 (9 Geo. IV. c. 35), whereby salmon were not to be "slain from the Feast of the Assumption of Our Lady until the Feast of Saint Andrew in winter," and the enactments "*Anent Cruves*" * were confirmed.

In 1840 (3 & 4 Vict. c. 74) Scotch oyster-beds received protection, and seven years later (by 10 & 11 Vict. c. 92) similar protection was extended to mussels.

The thirty sections contained in the Third Part of the Sea Fisheries Act of 1868 regulate the relations of the State with fishermen in regard to spawning beds. These provisions relate only to oysters and mussels, together with their brood, ware, spat, or spawn generally, by whatever name designated. They apply to the territorial seas only of Great Britain, with the exception of those of Ireland, the Isle of Man, and the Channel Islands.

The following procedure is adopted in order to establish protection.

The promoters, having first given notice to the adjoining landowners, who may raise objections, forward a memorial to the Board of Trade, praying for an order to protect a certain portion of the bed of the sea. In reply, the Board of Trade appoints an inspector to investigate, at some place in the locality itself, the desirability of making an order, and, influenced by his report, the Board either grants the order or withholds it. If granted, the order must be published in the district, and it does not prevail until it has been confirmed by an Act of Parliament. If opposed in its passage through the House, it will be referred to a Select Committee; but the Board of Trade has limited powers subsequently to amend the order. The heavy expenses of

* *Cruves* = "fish-traps."

the memorial and Board of Trade fees fall upon the promoters, and this is a great drawback to the utility of the provisions. Companies and capitalists can bear the expense, but it is beyond the capacity of a poor fisherman, who might successfully cultivate two or three acres of sea-bed. It has been elsewhere pointed out that it is less to the undertakings of companies and capitalists that the national fishing industry must look for its prosperity than to the individually small, but widely extended, successes of separate members of the fishing community.

An order, when confirmed, has an alternative result :—

1. It either makes the grantee (or grantees) the owner of a several fishery ; or
2. It gives him (or them) the right to regulate a defined district.

In the first case, the grantee has in himself alone the exclusive right of depositing, propagating, dredging, and taking oysters or mussels ; and at all seasons such a grantee would most frequently be a private individual or a commercial company.

In the second case, the right to regulate gives the grantees powers to impose restrictions, to levy tolls and royalties, and to provide improvements. Grantees of this class might be a philanthropic society or an urban or other improvement corporation.

Neither of the above grants may extend over sixty years ; if the grant is not properly or productively utilised, the Board of Trade may determine it at any time, and for this purpose inquiries will be from time to time directed. The area of the grant must be properly defined by stakes or buoys, and sufficient evidence of its unmistakeable definition will be a certificate from the Board of Trade to that effect.

If the proposed area belongs to the Crown personally or

to the Duchies of Lancaster or Cornwall, the consent of the Woods' Commissioners, or of the Chancellor of Lancaster, or the Duke of Cornwall respectively, must be first obtained ; whilst any shore landowners may claim compensation under the Lands Clauses Acts. The orders further will not abridge a private fishery granted by a local Act, or by Royal grant, or immemorial usage, such as are frequently weirs. To afford publicity throughout the district, the Third Part of the Fisheries Act, together with the order itself, and the subsequent Act confirming the order, must be sold by the grantees to any applicant for sixpence, and the Board of Trade is to report annually to Parliament upon the working of the grants it allows.

For judicial purposes, the area of the grant is held to be in the county to which it is opposite ; and if only the bed is properly marked out, all oysters in it are held to be the property of the grantees. This must be noted as a restriction on title by "occupancy," which prevails in regard to almost all other sea-fish. He who is first to catch a herring is the only lawful owner of it, but it is as illegal to take an oyster from an authorised bed as a fowl from a poultry yard.

All oysters removed from a granted area remain, notwithstanding removal, the property of the grantee of the bed. The only title to such must be derived either from the owner of the bed himself or through sale in market overt ; the person selling in the latter is scarcely likely to be a thief, and, if he is, it has long been a general principle of English law that the publicity he has courted gives him a title,—not as a reward for his audacity, but simply as a matter of legislative convenience and to avoid endless disputes.

In regard to the removal of oysters from an authorised

bed, a novel principle of evidence is introduced into our legal system. It lies midway between the *onus probandi* (that the oysters were honestly obtained) resting upon the prisoner, and the proof (that they were fraudulently removed from the prosecutor's possession) resting on the prosecutor. It is expressly enacted that, if two beds belonging to different owners are contiguous, it is sufficient to show that any oysters stolen must have been removed from one or other of the adjoining beds, if not actually from that belonging to the prosecutor.

The direct protection of spawning beds is also provided for. All fishing implements, except a line and hook, or a net adapted solely for catching floating fish, and so used as not to injure any oyster- or spawning-bed, are prohibited in the defined district. Ballast, except such as is lawfully authorised for the improvement of navigation, may not be removed thence. Rubbish may not be deposited, nor may any apparatus prejudicial to the bed be placed there, except such as is absolutely necessary for anchorage. And, lastly, if the bed is disturbed in any way, compensation may be awarded the grantees, and penalties varying from £2 to £10 are incurred.

A perusal of the foregoing provisions of the Sea Fisheries Act of 1868 will show them to be so equitable and simple that, with the one drawback of the expense involved in procuring and confirming an order, modified in 1877 (by section 7 of 40 & 41 Vict. c. 42), it is difficult to perceive what more legislation can do to promote oyster culture and protect oyster spawning-beds. All vested interests are considered; in spite of the inconvenience which it may possibly occasion navigation, private property in the bed of the sea—a most unusual gift—is permitted; Parliament, through the Board of Trade, becomes directly interested in

the matter, and ready means of convicting offenders are given to courts of law.

In the very next year the South of England Oyster Company took advantage of the Act, and The Oyster and Mussels Fishery Orders Confirmation Act, 1869 (No. 2), was passed. This confirmation Act is worthy of consideration, as it shows how the means accorded in 1868 were put to practical use. The Act itself is a short one of three sections only, with a schedule containing in ten articles the order confirmed. Its second section amends section 45 of the Sea Fisheries Act of 1868. Section 45 implied that by a certificate that a grant was improperly utilised the whole grant must be determined; but the amending section 2 enacted that a certificate might apply to part only of a grant. This in itself is a matter of but trivial importance, but it proves that these confirmatory Acts may from time to time be utilised for the amendment of our sea fishery laws generally, without, now that the question of fishery legislation is on a clearly defined basis, either passing express amendment Acts, on the one hand, or re-opening the whole subject of 1866 on the other, for the sake of a new enactment to supersede that of 1868.

The company in question obtained by their order 200 acres in Langston Harbour and round Hayling Island, and deposited plans with the Board of Trade. They acquired a several fishery, which was to be marked by poles and beacons at intervals not exceeding 100 yards. Obliterated marks were to be replaced at once, and notice was to be given at the first establishment of the fishery to fishermen and others by placards in the harbour and at Hayling Bridge. The grant was for sixty years only, and no works other than the marks and beacons mentioned

were to be erected on it without the express sanction of the Board of Trade.

1875 was a year of legislative activity, and the Sea Fisheries Act of 1868 was materially amended by a short express Act (38 Vict. c. 15). Any oyster company, established by any local Act passed since 1863, and subject to the control of the Inspectors of Fisheries under the Salmon Fishery Act of 1861, was thenceforth deemed to have obtained an order under the Third Part of the Sea Fisheries Act of 1868. It became subject to the Board of Trade, as if it had been originally established by the Act of 1868, and the powers over such a company vested in the Salmon Inspectors ceased; whilst any provisions in the local Act at variance with the control of the Board of Trade given by the Sea Fisheries Act were repealed. The growing preponderance of the Board of Trade in all commercial matters, whether connected directly with trade, like Fisheries, or, less directly, like Bankruptcies, has before been noted. The third section of this Act affords a further exemplification, and nothing in the Sea Fisheries Act of 1868 was to alter the regulations in the Merchant Shipping Act of 1862. This had the effect of enforcing for fishing vessels the one "bright white light," and not the two vertical lights of the Fisheries Act, and has been elsewhere mentioned. The second section enables an Inspector of the Board of Trade to examine upon oath when he considers the desirability of the cesser of a several oyster fishery, in the same way that he may (under section 32 of 31 & 32 Vict. c. 45) when he holds an inquiry as to the desirability of establishing a grant.

In 1876 the protection afforded the more-favoured oyster was extended to crabs and lobsters and their spawning-beds.

This was done by the Norfolk Crab and Lobster Act, which was repealed in the following year. The enactment nevertheless deserves notice as a specimen of a Local Act, and because it contains the principles more widely carried out in the Public Statute of 1877. It commenced by reciting that the "crab and lobster fisheries on the sea-coast of Norfolk had been greatly injured," and its operation extended from Salt-house on the north to Mundesley on the south so as to include midway Cromer of crustacean notoriety. Lobsters less than 7 inches long, and crabs of less diameter than $4\frac{1}{4}$ inches, were declared "unsizeable," and to "take" signified to capture "without forthwith returning alive into water with as little delay as possible." It became illegal to "take" or possess any lobster irrespective of size between the 25th of June and the 25th of July; or to sell at any time or season, under a penalty of £5, "unsizeable" crabs or lobsters. The penalty was recoverable within six months of the offence before two Norfolk justices, and half of it might by them be awarded to the complainant (39 & 40 Vict. c. 11).

The Act of 1877 (40 & 41 Vict. c. 42), which repealed the Norfolk enactment, amended the oyster, crab, lobster, and other sea-fishery laws generally. It treated, firstly, of oysters, unlike the Norfolk Act, which concerned crabs and lobsters only; secondly, of crabs and lobsters; and thirdly, it regulated the procedure necessary for the enforcement of its provisions.

In Great Britain, under a £2 penalty, persons are prohibited from selling deep-sea oysters between the 15th of June and the 4th of August, and other oysters between the 14th of May and the 4th of August, unless the oysters were either taken in foreign waters, or preserved in tins or removed for cultivation within certain districts. One of these

districts was the Thames estuary west of a line drawn from Orford Ness to the North Foreland. The next provision is of great importance. By it the Board of Trade, on application, and after inquiry and notice, may prohibit the taking of oysters during any period less than a year. The Board of Trade may, in addition, renew its prohibition from year to year, vary its orders, and enforce them by penalties ranging to £20. This part of the enactment does not, however, apply to grants of oyster rights under the Third Part of the Act of 1868. The application for a prohibition on oyster-taking may be made by any persons "appearing to the Board of Trade to represent the fishermen of any locality, or others locally interested in the fisheries." Justices, town councils, urban or rural, sanitary authorities, bodies corporate, or persons regulating a harbour, are examples of the possible applicants. By the seventh section, the expense of obtaining the confirmation of an order under the Third Part of the Sea Fisheries Act of 1868 is reduced. If for an area of less than 5 acres the grant of a several oyster-fishery does not exceed twenty-one years for its duration, and if no objections are raised in the locality against the order, the latter may be confirmed by Her Majesty in Council without the expense of a special Act. By the Second Part of the Act now under consideration, no person may either have in his possession, or sell, or buy, any crab of less diameter than $4\frac{1}{4}$ inches, nor those crabs which carry spawn, commonly called "berried crabs," nor those which have recently cast their shells, and which are known as "white" or "soft" crabs. The penalty for the first offence is £2, and for subsequent offences £10, together with the forfeiture of the crabs. Exception is, however, made in the case of crabs intended for bait "for fishing only." Under the same penalties no

lobster less than 8 inches in length may be possessed or sold. The extension by one inch of saleable lobsters under this Act will be noted, but it will also be observed that the principles in the present Act and those in the repealed Norfolk Act are the same. Section 10, corresponding to the previous 5th section, is of importance. By it the Board of Trade may prohibit the taking of edible crabs and lobsters for any periods, whether for years or for portions of each year, which may seem to it advisable, upon proper representation. The Irish Fishery Inspectors also were given the same powers as the Board of Trade derived from this section. For convenience of jurisdiction, any offender against this Act may be deemed to have committed the offence where he is found, and all oysters, crabs, and lobsters, the possession of which is rendered illegal by this Act, may be searched for by those persons who are authorised to search for unwholesome food, such as Market and other Sanitary Inspectors. In England, any two justices sitting at Petty Sessions may convict, and, in addition to Great Britain, the Act applies to Man and the Channel Islands. The 15th section has been before alluded to. It is of great Anglo-French international importance. The Convention in the Act of 1843 is revived so far as it regards the jurisdiction of British courts over French fishermen. It will be remembered that the Act of 1868 repealed the Convention in the Act of 1843, and also that the Convention contained in the Act of 1868 never came into operation, because the day to be fixed for its commencement was, in fact, never fixed at all.

The enactments briefly noticed above embody the only legislation which now prevails for the protection of either spawning-grounds, spawning-places, or spawning-beds. It will be seen that the last named are now alone protected

by direct legislation. Spawning-places are in one instance indirectly protected by the legislation of 1881, which prohibits the use of beam-trawls near clam-beds; whilst spawning-grounds, although they have been formerly indirectly protected by restrictions on the size of meshes and the modes of fishing, are now left, not to the protection of legislation, but to the protection afforded by the common-sense of fishermen and the recuperative energies of nature, with its ceaseless supply of fish.

CHAPTER III.

A NATURAL history classification of fishes does not fall within an essay on Fishery Legislation. Mr. Buckland divided fish into three classes for commercial consideration, and to these three may be added a fourth. It is only necessary to repeat here briefly the four classes more fully spoken of elsewhere. They were :—

1. Round surface-fish, usually caught in drift-nets, such as herrings and mackerel.
2. Flat ground-fish, like soles and brill, caught in trawl-nets.
3. Round-fish, found at all depths, caught either incidentally in trawls or drift-nets, or systematically fished for with hook and line.
4. Shell-fish and crustaceans.

With regard to salt-water fish of the first three classes, Close Time, with one exception, does not exist. This exceptional Close Time, which is not enforced, lasts from February 1st to the 31st of May: it relates only to the territorial waters below Ardnamurchan Point, which stands midway on the west coast of Scotland, to the Mull of Galloway at the extreme south-west corner of Wigtown.

This result may be historically traced from the following facts.

In 1860 the Glasgow fish-curers desired to enhance the price of summer fish by checking the supply of fish caught in the spring; and they succeeded in passing an Act (23 & 24 Vict. c. 92) whereby a close time for herrings was fixed from the 1st January to the 20th May, between Cape Wrath in Sutherland and Ardnamurchan Point; and from the 1st January to the 31st May between that Point and the Mull of Galloway, in all the Scotch western waters, whether territorial or not.

Fishermen starved, and clamoured for repeal. In 1862 and 1864, Royal Commissions investigated their hardship, and at no time was the Act of 1860 fully enforced.

In 1865 (by 28 & 29 Vict. c. 22) the close time was reduced to the period between the 1st February and 1st of May, and limited to the western seas between Ardnamurchan and Galloway Mull.

The Fisheries Act of 1868 altogether abolished close time in the deep seas; the result of this is therefore to confine the operations of the Acts of 1860 and 1865 to within the three-mile limit of the territorial sea off the lower half of the west Scotch coast.

With regard to the fourth class of fish, by the Sea Fisheries Act of 1868 a close time for oysters was imposed within the irregular parallelogram comprising the English Channel, and defined by the Land's End and the North Foreland at its angles on the British side, and by Dunkirk and Ushant on the French. The period extends from the 16th June to the 31st August, and during this time no boats may carry an oyster dredge, unless it has been previously sealed by the Customs House authorities in order to preclude its use.

The close time for lobsters off the Cromer coast, between

the 25th of June and the 25th of July, was noted when reference was made to the repealed Norfolk Act of 1876.

Also the legislation of 1877, which affords an indirect close-time to oysters, by preventing their sale between either the 14th of May or the 15th of June (as the case may be) and the 4th of August.

It may here be observed that a confusion has sometimes arisen between the close-time for, and certain precautions enforced to prevent the premature destruction of, salt-water fish. The Ardnamurchan close-time for herrings and the repealed Cromer lobster close-time are examples of close-time proper; examples of precautions (sometimes improperly referred to beneath the heading of close-time) which may prevail all the year round are the obsolete enactments of 1843, which limited herring-nets to a 1-inch mesh, and the legislation of 1881, still in force, by which beam-trawls may be prohibited near clam-beds. It is now sufficient to observe that both close-time and improper "close-time" substantially ceased in 1868, when, with the exception then made in favour of oysters, &c., and the subsequent protection granted to clams, all restrictions both on the time and on the mode of deep-sea fishing were removed.

Reference has been made to close-time both as defining the period during which fish may not be actually caught on the one hand, and as defining the period during which they may not be offered for sale on the other. Ardnamurchan herrings may not be caught between the 1st of February and the 31st of May, and oysters may not be sold between the 15th of June and the 4th of August. Close-time is thus twofold; it either relates to time of catching or to time of sale. As in Mother Glasse's receipt ("First catch * your hare, then cook him"), so with fish; the catch-

* If at least it be not more correctly, "First case," or skin "your hare," &c. as Mr. Augustus Sala has more than once pointed out, I believe.

ing is primary and the sale secondary. The secondary method of enforcing close-time would, however, appear to go further to the root of the matter, because more fish are caught for sale than for the actual consumption of fishermen. The secondary method has this further advantage: it never can withhold the direct supply of fish food from fishermen so as to occasion starvation; the most it can do is to deprive them of the extra articles bought with surplus profits. Messrs. Caird, Huxley, and Shaw Lefevre came to the conclusion in 1866 that, "leaving oyster fisheries out of consideration," the sea fisheries neither were, nor need be, under restrictions in regard to close-time; but since, outside Blue Books, so little, if anything at all, has been written on the relations of the State with Fishermen, any reasoning showing the distinction between the intimately allied principles of close-time for catching and close-time for sale will perhaps be pardoned. There remains a further method of protecting fish, which has sometimes been improperly treated of under "close-time," but which relates to their size at sale only. Examples of this are the obsolete enactments of 1714 (1 Geo. I. stat. 2), whereby, *inter alia*, no turbot shall be exposed for sale if less than 16 inches "from the eyes to the utmost extent of the tail;" and also the present valid legislation of 1877 already spoken of, by which lobsters less than 8 inches long may not be possessed or sold.

The whole question of fish protection might be comprehensively dealt with under the seven following headings:—

I. Close-time during which the particular fish protected may not be caught—*e.g.*, Ardnamurchan herrings, between 1st of February and 31st of May.

II. Close-time during which the fish protected may not

be sold—*e.g.*, deep-sea oysters, between the 15th of June and 4th of August.

- III. Close-time during which certain implements prejudicial to fish may not be used—*e.g.*, oyster-dredges in the Channel, between 15th of June and 31st of August.
- IV. Restrictions (irrespective of time) on the size or condition of fish when either possessed or offered for sale—*e.g.*, lobsters under 8 inches may not be possessed or sold at any time, nor may "berried crabs."
- V. Restrictions (irrespective of time) on the general use of certain implements—*e.g.*, the repealed enactment which prohibited the use of all herring-nets, the meshes of which were less than an inch.
- VI. Restrictions (irrespective of time) on the use of certain implements in particular places—*e.g.*, beam-trawls are prohibited near clam-beds.
- VII. Restrictions established by creating private property in the sea-bed—*e.g.*, oyster-beds or mussel-beds established under the third part of the Sea Fisheries Act of 1868.

The first three headings concern close-time properly so-called, because they relate to fixed periods during which fish are protected. When, as in the first case, the capture of a particular kind of fish is prohibited during a fixed period, that kind of fish is directly protected; when, as in the second, a restriction is put on the sale of certain fish; or, as in the third, on the use of certain implements during a fixed period, fish are protected indirectly only.

Divisions IV., V., VI., and VII. cannot properly be called close-times at all. In IV., certain precautions are taken to directly protect certain fish in a certain condition at all

times ; and in V. ambitious and perfectly impracticable endeavours are made to indirectly protect, at all times and at all places, small fish generally.

The following suggestion for the protection of fish may perhaps be simple and practicable. It is suggested that there might be three legislatively enforced schedules, headed respectively "Close-time," Contraband Fish," and "Protected Areas."

In the first might be named certain fixed periods during which the possession of certain specified fish was illegal. These periods might vary according to the spawning time of different fish, and it would strike both at capture and sale without being troubled about placing restrictions on implements.

The second schedule might contain a list of fish, the possession of which is at all times illegal. Any species of fish apparently decreasing might be included in this list, and removed from it when it appeared to be again abundant. It might also include fish of an "unsizeable" or unmarketable condition ; whilst wholesome, large, or not actually spawning (*e.g.*, crabs not "berried," and over 4½ inches) fish of the same species might be excluded.

The third might contain a list of defined places, which Government might regulate, either morally by the bare delimitation by buoys, or physically by the presence of a gunboat. If the exact locality of a large spawning ground be actually discovered, it might be proclaimed a protected area ; and to enforce its protection either the use, or probable use, of implements of certain kinds might be restricted.

The above principles appear to be, in fact, those towards which legislation is now tending ; but they do not appear to have been intentionally used as the text from which the

subject has been treated, or as the basis, the three principles being taken together, on which our fish-protecting enactments have been founded.

It is suggested that the first schedule proposed should be as limited as possible ; and that, because there is no evidence that deep-sea fish generally are really decreasing in quantity, the interests of the fishing class should be held to counterbalance those interests which protect such fish. It might be confined chiefly to shell-fish and crustaceans, and amongst these classes protection might be extended much further than at present. These are proved to need protection because, from being more or less stationary on the bed of the sea near the coast, when once their haunts have been discovered, they may readily be rendered extinct.

In consideration of fishermen's interests the contents of the secondly suggested schedule, so far as it concerns all fish of certain classes, should be as limited as possible. The hardship of enforcing a close-time for herrings or shoal-fish would be great. Should mullet or whiting, for instance, ever require protection, a close-time of a year or more would impose no great hardship, for those who catch such fish rarely derive their livelihood from one species of fish only. So far as it concerns "unmarketable" and "unsizable" fish, the restrictions might with safety be more widely extended than they are at present. In the case of "unmarketable and unedible" fish, the combined interests of consumers and fish protection outweigh those of fishermen.

Every endeavour might be made to add to the third schedule as many "protected areas" of a *few* acres only as can be properly cultivated by private enterprise. The interests of fishermen and the interests which promote an abundant supply of fish, of course, coincide. In most cases

fishermen are naturally loathe to recognise this fact. Living as they do from hand to mouth, they can scarcely be expected readily to acquiesce in a cessation of fishing for perhaps six months, or longer, in order that in the, to them, remote future of a year or two there may possibly be more fish. For the same reason, necessity compels them to object to all restrictions, wise or unwise. In the case of small protected areas the coincidence of the interests of fishermen with those of fish protection are at once brought within the grasp of the perception of at least the grantees of the area. The only injurious effects protected areas may have will be the restrictions they impose on the rights of fishermen, other than grantees, such as trawlers; if, however, the areas are small, the sea is so large that the protection extended over them need not unduly favour fishermen who are grantees to the detriment of others who are not. In regard to the suggested proclamation of deep-sea spawning grounds as protected areas, it is improbable that at present anything can be done. Their exact locality must first be accurately discovered, and then, if an International Convention can be obtained, they may possibly be worth the expense of protection. In any case, on large spawning grounds and outside territorial waters, the evidence of the fish supply certainly appears to indicate that the interests of fishermen deserve to preponderate over those of fish protection.

It will thus be seen that indirect methods of fish protection, such as restrictions on meshes, and on modes of fishing, have ceased. Fish are, in fact, now directly protected under either the principle of close-time, or that of contraband, or that of protected areas. Fishermen are neither statute nor placard readers, and if the different restrictions now contained in different statutes and in different

notices, at different places, could be brought beneath their observation together, the prohibitions might possibly be more efficacious than they are at present. A large proportion of fishermen neither know nor regard the restrictions which now exist, more especially those which relate to "unsizable" fish.

It has been previously said that the State has seldom interfered to regulate the rights of Fishermen as amongst themselves. There are, nevertheless, exceptions.

The protection which certain classes of fishermen have claimed against other classes, is not of itself a matter of fish-protection ; but it has occasionally influenced legislation when it has favoured one class beyond another. Drifters have more than once accused trawlers of wantonly destroying floating fish, but there does not appear to be any substantial ground for the complaint.

The most striking instance of class-protection in fishery legislation is that contained in the sixty-eighth section of the Sea Fisheries Act of 1868. Under a penalty of £20 no person on the Cornish coast (except east of Trevose Head) may between sunrise and sunset from the 25th of July to the 25th of November, use a drift or trawl-net within two miles of the shore ; nor may he anchor a boat or use a net within half a mile of sean-boats fishing. This is in confirmation of the St. Ives Local Act before mentioned ; and although a fixed period is named, it will be seen that this favouring regulation comes within the principle of "protected areas" more than within that of "close-time."

Disputes between drifters and trawlers are of long standing, and still exist on Loch Fyne, where by a "trawl" is meant, not the ordinary purse-shaped drag-net, but a "circle" net, more like a "sean."

It may readily be imagined that disputes amongst

different classes of fishermen are of much easier origin, and therefore of much more frequent occurrence on the deeply indented western coast of Scotland than elsewhere in the United Kingdom. A reference to the map will show that islands abound there, that the seas are land-locked, and that bays and estuaries adopt the most zig-zag pattern conceivable.

From these geographical formations fishermen of different crafts are brought into immediate contact with each other, and especial care is necessary in holding the scales of justice evenly for the reception of their complaints, if it becomes necessary at any time to legislate between them. Except as a matter of police, and to prevent actual brawls, there can be no doubt that it is preferable that fishermen should be left to regulate their respective rights as between themselves to themselves, rather than that they should successfully invoke the interference of legislation.

In 1851 (by 14 & 15 Vict. c. 26, s. 6) trawling was prohibited wherever the herring fishery was being carried on. No nets other than drift-nets might be carried on board vessels under forfeiture and penalties. This Act refers to Scotland, but it possesses the peculiarity of nowhere stating the extent of its application. Its prohibition was ineffectual, and "trawling" (that is, circle, ring, drag, or scringe-net fishing) still continued. The jealousy of drifters against trawlers did not diminish, and in 1860 more effectual methods were adopted in order to insure to the former the preference which at that time the Legislature believed they deserved. By the 23 & 24 Vict. c. 92—an altogether repressive enactment, previously noticed in regard to Ardnamurchan close-time—the Commissioners were constituted almost omnipotent over the herring-fisheries of Scotland in regard to every class of restriction, and it was expressly

enacted that every kind of net other than the drift-net should be laid aside during the herring-fisheries. In the body of the Act, and in its schedules, elaborate provisions were made for its enforcement, and (a fact to be regretted) it brought to vigorous life the principle of 1851, which had become a dead letter. Again, in 1861 (by 24 & 25 Vict. c. 72), this principle received fresh growth.

In 1862, 1864, and 1866, Parliamentary Commissioners made enquiries, which resulted in strong recommendations against the preference given to drifters. There was no evidence whatever that trawlers unnecessarily diminished the fish generally, or that they lessened the takes of drifters, after it has once been remembered that a circle-net is a far more potent engine than a drift-net, in which fact alone, and not in a *bona-fide* desire, for fish-protection, lies the jealousy borne by drift-net owners against trawlers. Since 1861, in fact, when trawling was prohibited, the drifters had taken annually less fish than in the years before when trawling extensively prevailed.

1867 was a statute-making year, and by one of its numerous statutes (by 30 & 31 Vict. c. 52) the omnipotence given the Fishery Commissioners in 1860 was restricted, and all nets of every kind whatsoever became again permitted, provided they had "meshes of a size not less than that permitted or required by law." This qualification, on the deep-seas at least, sunk to the ground in the following year beneath the Sea Fisheries Act. The Act of 1867 was not repealed in 1868; it therefore prevails in most respects.

The above instance of Fishery Class Legislation will be sufficient to exemplify what the State has done in that direction, both as it directly concerns Fishermen, and as it indirectly relates to Fish Protection.

CHAPTER IV.

THE form of modern Acts of Parliament, which go direct to the point without giving the causes which lead to it, is a desirable advance towards simplicity ; but in the cumbrous preambles and tedious recitals of older legislation, the principles which have fluctuated in influencing the relations of the State with different classes of its subjects are often found enshrined in a few explanatory words. In regard to the fisheries certain fixed principles constantly recur ; as that sea fishing generally “is of most essential importance to the wealth and naval strength of the kingdom ;” that the fisheries must be encouraged as a “fruitful nursery of able seamen for our ships of war ;” that the superiority of certain of our fish having become acknowledged “in foreign markets, the credit of our fisheries must be maintained abroad ;” that diligence must be observed in details, as that inferior officers appointed to supervise barrels and fish-packing must themselves have been “skilful coopers,” whilst the staves of barrels must be at least “half an inch in thickness ;” that our own methods should be improved when necessary by the adoption of those of other fishing communities, as that certain fish should be prepared “after the manner of the Dutch fishermen ;” that in every way “the wanton destruction of fish” to the diminution of “a national source of sustenance” is to be avoided ; that fisheries must be protected, because their protection “is expedient for the purpose of providing a cheap and wholesome article of food for the support of the poor ;” that they provide employment for a “large class of industrious poor ;” and that, finally, they should receive “every reasonable encouragement which it is in the power of Parliament to

bestow." (29 Geo. II. c. 23; 2 Geo. III. c. 15; 11 Geo. III. c. 31; 26 Geo. III. c. 81, *et passim*.)

In the reigns of George I. and George III., and many years previous to 1847, Trustees for improving the Hempen Manufacture and for encouraging Fisheries, chiefly in Scotland, had been appointed, whilst money also had been granted for promoting fisheries and manufactures. The connection between fisheries and hemp—by reason of the use of twine for nets—is obvious, and although the legislation of 1847 (10 & 11 Vict. c. 91) only affected Scotland when it appointed additional trustees and Herring Fishery Commissioners, it is worthy of note as once more confirming the general principle that the Fishing Industry is in itself of the nature of a large national industry, and as such deserving of State recognition and encouragement. The connection between hemp and nets is not so frequent as it was formerly. The majority of nets are now manufactured of cotton; this material, although less durable than hemp, is of lighter weight, and it therefore renders the nets more readily managed, whilst a less number of corks and bungs is sufficient to float them. Again in 1866 (by 29 & 30 Vict. c. 72), and in 1867 (30 & 31 Vict. c. 32) the commissioners of Her Majesty's Treasury were further authorised to grant loans out of the Consolidated Funds for carrying on sea fisheries, provided that the whole grant for these and other industries and manufactures did not exceed £300,000 in one year.

So early as 1824, when (by 5 Geo. IV. c. 64) provisions were made for the alteration and ultimate abolition of fishery bounties, the principle was legislatively acknowledged that it is occasionally expedient to pecuniarily assist the poorest class of fishermen, who, from the absence of capital with which to repair even the smallest loss, are

unable to develop their industry. As a premium divisible amongst those vessels which obtained the most bounty-money, since 1808 (by 48 Geo. III. c. 110) £3000 had been annually awarded, and subsequently £5000 also had been given as an additional annual bonus. The abolition of bounties removed the object of these sums, and in 1824 they were devoted, amongst other purposes, to building piers, and providing materials for the repair of the boats of poor fishermen on the Scotch and Irish coasts. On the 1st of October, 1869, the control of the Irish deep-sea fisheries became vested in the Lord Lieutenant, and in 1870 the Royal Commissioners on Irish oyster fisheries reported on the Irish deep-sea fisheries generally. In this Report it is shown that the advances authorised in 1824, and other similar appointed sums, were not utilised to their full extent, and it was pointed out that on the west coast of Ireland, at least, good results were likely to follow from further loans.

The change in 1824 from a policy of bounties to one which aimed at providing capital is worthy of note. Bounty money stimulated "owners," whilst it only indirectly benefited the fishing population upon whom boat-owners are dependent. The policy which provides capital in deserving cases goes further to the root of the matter. By increasing competition it urges the industry towards perfection, whilst by providing content and inducing prosperity amongst the humbler classes it may, if judiciously applied, materially aid in developing the sea fishery into a national and commercial undertaking, as opposed to one which is commercial only, and in the hands of large capitalists.

Whether either a policy of bounties or a policy of unearned capital can in the abstract in any case be a correct

one, it is not to the present purpose to inquire here ; but in the case of fisheries there can be no doubt that, as compared with each other, the newer policy, which forbids bounties, but which is not entirely adverse to loans in exceptional cases, is the more satisfactory of the two.

Parliament has, since 1833, interested itself greatly in sea fisheries through Royal Commissions. The most recent investigation is that of last autumn (the autumn of 1882), the Report of which, I believe, is not yet published. The case of Otto Brand, a Hull skipper, who was hanged for the murder of an apprentice at sea, and other causes, rendered an investigation into the treatment of apprentices, and similar matters, desirable. This Commission contained amongst its lay members—as distinguished from those commissioners who are also legislators—a marine official of the Board of Trade, and this fact is worthy of notice as showing the preponderance which that department continues to acquire in matters relating to fisheries. The abolition of the arrest without warrant of absconding hands is, according to some evidence, occasioning considerable expense and difficulty to boat-owners on our East Coast. Temperate, hardy, and manly, though it is—and these attributes are evidenced by the fact that the Royal National Lifeboat Institution mans its boats from beachmen and fishermen—the fishing class is naturally neither possessed of the most rudimentary book-learning, nor of those “powers of description” so necessary in order to give conclusive evidence before Royal Commissions generally. The School Board and the general advance of education will probably enable fishermen to keep satisfactory log-books, to acquire a knowledge of water-temperatures, of classes of fish, and of some other very rudimentarily

scientific, yet, nevertheless, simple practical matters, which are essential as a basis for legislation in regard to deep sea fisheries.

Government cruisers with scientific professors on board have been most successfully used in putting the finishing touch, by scientific classifications, to the knowledge of facts of practical importance, and many discoveries, useful to the simplest fishermen, have been made by this means. Their surveys, however, can be periodical only, and cannot be based on long-continued experience. "Experience, itself, is fallacious," but it is only on the knowledge acquired from day to day, and throughout the year, by the incessant and systematised experience of fishermen themselves, and on their capacity to place the results in the form of evidence clearly and without prejudice before commissioners and legislators, that legislation itself can most satisfactorily act in providing regulations for Sea Fisheries.

Since 1861, salmon alone, the fish particularly excepted from the operation of the Sea Fisheries Act of 1868, has received as much attention at the hands of the legislature as all salt-water fish taken together. Its scarcity, since the days when city apprentices expressly stipulated with their masters that the latter should not perpetuate the monstrous cruelty of feeding them on it more than twice a week, amply justifies its present exemplary protection; but although the salmon possesses fifty different names, from a laurel, blue-pole, fork-tail, and pugg-peal, to a bunting, yellow-fin, pink or fingerling (24 & 25 Vict. c. 109, sect. 4), there is no reason why, when necessary and practicable, the protection of other salt-water fish should not progress *pari passu* with that extended to salmon. The legislature is fully alive to the

fact, but because the salmon is, to a great extent, a river-fish, its protection has more readily become practicable, just in the same way as the legislation of 1878 (41 & 42 Vict. c. 39), which protects fresh-water fish, may be enforced without difficulty. Any jealousy salmon may feel at equal protection being extended to their humbler salt-water cousins, may, perhaps, be appeased by describing the former as "Fluvio-Oceanic." As a legislative fact, it is because salmon for the most part, and fresh-water fish invariably, are found in rivers or estuaries, which, from being limited spaces, are an easy subject of jurisdiction, that they have received more direct protection than salt-water fish.

The subject of fishermen and their laws will, perhaps, be incomplete without some reference to royal fish and the seal fishery. Royal fish are whales, which are, strictly speaking, mammals, and not fish at all, and sturgeon, comparatively rare in the waters of the United Kingdom, but the subject of a staple Russian fishery; both of these, if either thrown ashore or caught near the English coast, become the property of the Sovereign. The head of a stranded whale was formerly presented to the King, whilst the tail, with more generosity than grace, was assigned his Consort (1 Br. & Had. Comm. 260). It is unnecessary to observe that the Crown is not now exacting in regard to these rights. This may be inferred from the fact that a sturgeon, six feet in length, having been caught during the present month (April, 1883) in Southampton water, the Mayor, after having *purchased* the prize, forwarded it to Windsor as a due more complimentary than feudal. In 1875, the seal fishery, which, like that for whales, is conducted from ports on the east of Scotland, became the subject of a statute. Provision was then made (by 38 &

39 Vict. c. 18) for the promulgation by Order in Council of a close-time for seals in the seas near Greenland ; and the protected area was specified in a schedule to the Act. This legislation is hypothetical ; granted a convention with foreign powers, and granted the possibility of catching and identifying offenders in so wide an expanse as the Arctic Seas, its effect will be beneficial. At the end of last century (sec 11 Geo. III. c. 31), in some cases fishing vessels competing for bounty-money were forbidden "to wet their nets" before June 24th. This was the day fixed for their arrival at Brassey Sound, in the Shetlands, or at whatever place might have been named for their "rendezvous ;" it gave the opportunity for all boats to start fair, and for small fish to reach maturity. How far a particular boat had obeyed the injunction not to wet its nets could, for the most part, only be calculated according to the date at which it had left its port of equipment. In the same way, the enforcement of a close-time for seals must depend more on regulations affecting the date of departure for the seal fishery of vessels from the Scotch ports, than in either efficient police supervision in the Arctic Seas, or on accusations brought against offenders by seal fishermen who have observed the close-time.

The necessity for Conventions in order to give an internationally effective and legal right to regulate sea fisheries outside territorial waters, combined with the difficulty of supervising probable offenders on so wide an expanse as the sea, has always been, and always will be, an impediment to endeavours to regulate sea fisheries, even when they are situated comparatively near our own shores. Fortunately, as has been before pointed out, such regulation is not, on the whole, very necessary. The fish of the deep sea do not appear to decrease, whilst fishermen have, to a great

extent, by Usage established a law for themselves, which, although it is occasionally disturbed by the jealousy existing between trawlers and drifters, and trawlers and liners, on the whole works satisfactorily. There are, however, exceptions, and notably amongst these, there is need for an Anglo-Dutch convention. An efficient maritime police, sanctioned by the nations on either side the North Sea, is necessary for the protection of our East Coast fishermen. The latter have long been harassed by the thefts of nets perpetrated by the Dutch, and by the wanton destruction occasioned by "Belgian devils"—infernal machines in the form of anchors, which some foreign trawlers maliciously drag through English drift-nets for the purpose of destroying or stealing them. Our own fishermen, in their disputes with these foreign offenders, may not invariably be in the right, but facts, so far as they are already known, certainly point to the greater wrong being on the side of the foreigners. A convention exists between France and England, and disputes between French and English fishermen are rare : no convention exists between England and Holland for the protection of sea fisheries, and disputes between English and Dutch fishermen are constant.

The mere fact of the signing of a Convention cannot, in itself, make it of any practical use, even when each signatory Government conscientiously desires its success. It is dependent on two circumstances : firstly, on the power which the combined Governments may be able to exercise in order to enforce it ; and secondly, and chiefly, on the mutual forbearance of the fishermen belonging to either country in their relations with each other internationally, and amongst themselves as fellow-countrymen. The forbearance of fishermen will regulate their conduct in proportion to their accurate understanding of what is a just

Usage in respect to the matters of their calling, and to their knowledge of security in the enforcement of a just Usage. For this reason their remedies should be made as simple as possible. Fishermen, with the exception of salvors, who are chiefly beachmen or long-shore fishermen, are not a litigious class; the majority prefer losing their remedy to losing a day's fishing. Their knowledge of what is a just usage will increase proportionately as their class jealousies are dissipated, and as they learn many things over and above the present mere practical routine of their business. Drifters may be taught that trawlers, provided that the latter do not actually come into contact with drift-nets, so far from lessening the supply of fish, may, by stirring the fish up, increase the catch of the drift-nets; whilst it may be shown to all that it is possible by learning something of water-temperatures and other matters regulating the haunts of fish at different seasons of the year, that a bad fishing may possibly be turned into a good one. In this direction it is not improbable that some successful results might be achieved if those who are acquainted with the rudimentary principles already discovered volunteered technical instruction to fishermen over and above that which fishermen already possess, and which at present chiefly consists in the management of their boats and nets, and going at fixed periods of the year to certain fixed localities, and rarely to any others.

In some districts inhabited by fishermen, many of whom reside in villages some miles from the coast, commercial enterprise has induced railway companies to issue tickets at reduced fares during those periods of the year at which fishermen are either "making up" or habitually returning between their boats and their homes. Philanthropic enterprise also has at many fishing stations provided them with

institutes and fishermen's shelters. These instances will indicate that the nation generally, as distinguished from the State—meaning by State the legislative and executive identity of the country—is prepared to perform whatever may be reasonably required of it in the interests of fishermen.

In conclusion, the whole question of the State's relations to fishermen is based upon two main principles :—

- I. That an industry amongst fishermen, whereby the national contentment and prosperity may be increased, must be encouraged : and
- II. That the supply of that which (for the reason that fish may be had for the mere catching) ought to be the cheapest form of food should be abundant to all those classes, in addition to fishermen, which may be shortly designated "consumers."

In furtherance of the first of these principles, the State has done much by legislation. In furtherance of the second, if the London and Westminster Fish Supply Act is excepted, it has done but little. Both of these principles are, it is needless to say, closely allied ; but, in the present situation of affairs, each appears to demand separate regulations.

Between the actual fisherman's fair price for the fish he has caught, and the fair price to be paid for it by the inland consumer, there are two intermediate facts for consideration : the expense of carriage and the expense of risk (in this case, as the matter now stands, "caveat vendor," *i.e.* the fisherman or his representatives intermediate between him and the consumer), because fish is a perishable article. In the nature of things themselves, artificial circumstances being removed, these two considerations, and these two only, need prevail.

It may be taken as a fact that fishermen receive upon the average the fair price for the article they supply ; and, as a further fact, that consumers pay enormously over the value of the fish, of the carriage, and of the risk combined.

Whatever exceeds fair prime value, as in the fisherman's hands, fair payment for carriage, and fair payment for risk combined, is money wasted as between the fisherman and the consumer ; and these two are, in fact, the only persons for whom political economy, artificial circumstances being laid aside, demands any consideration.

Carriers deserve their due ; those who risk deserve their due ; but, as they are both only means, they deserve profit only in accordance with the services demanded of them, and not upon the speculations they may voluntarily undertake.

The difficulty which the present generation is determined to remove lies at neither end of the case. Fishermen catch fish abundantly ; consumers are ever ready to buy ; the excess money, after payment of fisherman's fair price, of fair carriage, and of fair risk, is lost midway.

For the sake of the industrious poor who lead wholesome lives at sea in fishing ; for the sake of the industrious poor who lead unwholesome lives in the atmosphere of large cities, and equally with both for the sake of every class, whether high or low, which is justified in refusing upon principle to pay more than the fair value for each single thing it buys, all unnecessary receptacles into which the excess money falls should be closed. The excess money will then be found to be divisible between the fisherman and the consumer. As it was before stated that there is every reason to believe that the fisherman receives his fair price, the greater portion of the excess money will be found to remain as a saving in the consumer's pocket.

The receptacles into which all value intermediate between fishermen and consumers falls appear to be five :

1. Carriers who receive fair remuneration.
2. Carriers who receive unfair remuneration.
3. Fair riskers, meaning thereby necessary intermediate traders, who receive a fair profit.
4. Unfair riskers, or unnecessarily intermediate traders or those who receive an unfair profit.
5. Space, as when wholesome or edible fish is thrown on the land to rot as manure, or is otherwise lost as food, because there is no accommodation for effecting its sale, or because it is removed from consumption for other reasons.

In regard to fair carriers and unfair carriers, including under carriers, the receivers of market tolls and of other similar incidental expenses connected with carriage, it may be said upon the evidence that fish-carriers generally do not receive more than their fair remuneration. Argument on this point is unnecessary, as the evidence is ascertainable and fixed ; it involves merely a reference to railway charges, varying from 21s. to 40s. a ton, almost irrespective of distance, for land-borne fish ; or, in the case of sea-borne fish, to the competition, upon ordinary mercantile principles, of the cost of chartering a vessel from the fishing-boat or fishing-port to the consumer's market, according to distance and tons carried.

The question of drawing a distinction between fair traders and unfair traders is one for consumers alone to settle ; if there be unfair and unnecessary traders, consumers have the power to discover and eliminate them. This power, from being thus exercised by consumers, who are private individuals, and, not a political corporation like the State, need not be hampered by any consideration for the vested

interests of traders, whether fair or unfair, if any such vested interests there be which the apathy of consumers has either condoned by its acquiescence or allowed to grow up since 1761 or earlier.

In regard to such wholesome food as is now, perhaps, in some instances, lost in space because of insufficient market accommodation, both consumers and fishermen have a more or less direct right to demand the assistance of the State in rectifying the evil ; whilst if there be traders with vested interests, which is much to be doubted, whom State assistance to fishermen and consumers would actually, not indirectly, injure, such traders may in some instances have a claim for compensation. There can be no doubt that the fish consumers in all large towns have a right to demand assistance of the State for the erection of all necessary markets, and that they should be unimpeded by any restrictions imposed in favour of old-established markets, because at the date of their establishment those markets were alone necessary.

Any State legislation which gives encouragement to consumers to buy gives encouragement to fishermen to fish, and for this reason an essay on the relations of the State with fishermen would be incomplete without an allusion to the inland consumption of fish.

An effort has been made to trace in outline the principles which have regulated the State in its relations with one of the hardiest, best physically developed, and most industrious of the classes which assist in constituting it. This class has, with justice, formed an expectation of acquiescence to its demands in most cases in which it has looked to the constituted authorities for encouragement. This encouragement has been almost annually extended, and with the more readiness because at no time have the applicants clamoured

for assistance either by strikes or by popular pressure. This encouragement the State is now ready to extend still further, and it now only awaits the knowledge of the best means of rendering assistance. It now, therefore, only remains to hope, that the fishing class, assisted by the invention of improved implements, incited by further discoveries concerning the haunts and habits of fish, regulated by that restraint, so to use as not to abuse, which fishermen must apply to themselves in regard to fish protection, and aided by the mutual consent of foreign nations to adopt wise principles for the regulation of sea fisheries—that this class thus assisted may proceed to develope in the future, still further than it has done in the past, an industry of vital importance to the national and commercial prosperity of a maritime nation possessed of so large a sea-board as our own.

**SOME PARLIAMENTARY REPORTS
AFFECTING FISHERIES**

UPON WHICH

LEGISLATION HAS BEEN BASED RECENTLY.

1866. Sea Fisheries Commission.

1870. Deep Sea and Coast Fisheries (Ireland) Report.

1875. Norfolk Fisheries Report.

1878 Herring Fisheries (Scotland) Commission.

1879. Sea Fisheries Commission.

AN ANALYSIS

OF

SOME STATUTES REFERRED TO.

Year.	Statute.	Title.
1714	1 Geo. I. stat. 2	This Act imposes numerous restrictions on Sea Fishing. It does not appear to have been expressly repealed, but its provisions are not enforced.
1756	29 Geo. II. c. 23	To Encourage Scotch Fisheries. Repealed in 1868, except sections 1 and 17.
1761	2 Geo. III. c. 15	The London and Westminster Fish Supply Act. Repealed in 1868, except section 7.
1771	11 Geo. III. c. 31	To Encourage the White Herring Fishery. Repealed in 1868, except sections 11, 12, and 13.
1778	18 Geo. III. c. 33	To Protect Fish in Severn, &c.
1786	26 Geo. III. c. 81	To Encourage British Fisheries. Repealed in 1868, except section 19.
1799	39 Geo. III. c. 100	To Amend Fishery Acts. Repealed in 1868, except sections 2 and 3.
1804	44 Geo. III. c. xlv.	To Protect Sea Fisheries of Cumberland, Kirkcudbright, &c.

Year.	Statute.	Title.
1808	48 Geo. III. c. 110 ..	To Encourage Herring Fisheries. Repealed in 1868, except 33 sections, so far as they concern Scotland.
1810	50 Geo. III. c. 108 ..	To Impose Penalties for Breach of Fishing Contracts, &c.
1815	55 Geo. III. c. 94	To Amend Legislation of 1808.
1820	1 Geo. IV. c. 103	To Regulate Bounties.
1821	1 & 2 Geo. IV. c. 79 ..	To Repeal Bounties.
1824	5 Geo. IV. c. 64	To Amend Bounty Acts.
1828	9 Geo. IV. c. 39	A Scotch Salmon Act.
1830	11 Geo. IV. c. 54, and 1 Wm. IV. c. 54	To Revive certain Fishery Acts. Repealed in 1868, except as to Scotland, so far as inconsistent with 1868.
1841	4 & 5 Vict. c. lvii.	The St. Ives Bay Act.
1843	6 & 7 Vict. c. 79	The Fishery Convention Act. Repealed in 1868. Revived so far as "Convention" in 1875.
1847	10 & 11 Vict. c. 91	To Increase the Scotch Herring Fishery Trustees.
1847	10 & 11 Vict. c. 92	To Protect Scotch Mussel Fisheries.
1851	14 & 15 Vict. c. 26	To Amend British White Herring Fishery Laws. In 1868 5 sections were repealed entirely, 4 partially, and 3 unrepealed.
185-		Fishery Convention (1843) Confirmation Act.
1854	17 & 18 Vict. c. 104	Merchant Shipping Act. Part III. partially applied to Fishermen in 1862.
1858	21 & 22 Vict. c. lxi.	To Impose Fees on Branding in Scotland.
1860	23 & 24 Vict. c. 92	To Amend Scotch Herring Laws.

THE RELATIONS OF THE STATE, ETC.

Year.	Statute.	Title.
1861	24 & 25 Vict. c. 72 ..	Close Time Act, Scotland. Sections 2, 3, and 6 repealed in 1868.
1861	24 & 25 Vict. c. 109 ..	The Salmon Act.
1862	25 & 26 Vict. c. 63 ..	Merchant Shipping Act. Section 13 applies Merchant Shipping Act, 1854, to Fishermen.
1865	28 & 29 Vict. c. 22 ..	A Scotch Close Time Act.
1867	30 & 31 Vict. c. 32 ..	To Authorise Advances from Consolidated Fund.
1867	30 & 31 Vict. c. 52 ..	To Remove Scotch Restrictions on Nets.
1868	31 & 32 Vict. c. 45 ..	The Sea Fisheries Act.
1869	32 & 33 Vict. c. 31 ..	The Langston Channel Oyster Act.
1875	38 & 39 Vict. c. 15 ..	The Sea Fisheries Act, 1875.
1875	38 & 39 Vict. c. 18 ..	The Seal Fishery Act.
1876	39 & 40 Vict. c. 36 ..	Customs Consolidation Act. Section 48 exempts Lobsters and Fresh Fish from Report.
1876	39 & 40 Vict. c. cli. ..	The Norfolk Crab and Lobster Act. Repealed in 1877.
1877	40 & 41 Vict. c. 42 ..	The Oyster, Crab, and Lobster Act.
1877	40 & 41 Vict. c. 65 ..	The Fisheries (Dynamite) Act.
1878	41 & 42 Vict. c. 39 ..	The Fresh Water Fisheries Act.
1880	43 & 44 Vict. c. 16 ..	To Amend Seamen's Wages and Rating Laws. Section 7 extends to Fishermen.
1881	44 Vict. c. 11	To Protect Clam and Bait Beds.

THE
HISTORY OF DUTCH SEA FISHERIES:
THEIR
PROGRESS, DECLINE AND REVIVAL,
ESPECIALLY IN CONNECTION WITH THE LEGISLATION
, ON FISHERIES IN EARLIER AND LATER TIMES.

"They take up all of them with the angle, they catch them in their net, and gather them in their drag; therefore they rejoice and are glad."—HABAKKUK i. 15.

[A. BEAUJON.]

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PREFACE.

THE following pages contain, not a complete history of the Dutch sea fisheries, but merely the outlines of their history as connected with legislation.

The subject is a vast one. Sea fishery has throughout history been either the greatest, or among the most considerable, of the industries of the Netherlands. Some of its branches have during three centuries and a half been regulated and organised by laws and bye-laws, and have been constantly in the minds of the country's rulers, legislators, and publicists; and the mass of material for their history is, of course, in proportion to the total of attention bestowed upon the subject in former times. To read this subject up and exhaust it would be the work of many years, and involve a thorough search of the archives of the present kingdom of the Netherlands, several of its provinces, and many of its cities; whereas the present author has only had the seven months before him which have elapsed since the subject for this prize essay was known in Holland, and has during that short period by no means been master of the whole of his time. Several minor parts of the subject have for this reason been left out of the range of research; such are the sea fisheries of the provinces of Zealand, Friesland, and Groningen, the whole of the oyster business, and the salmon, herring, and other fisheries in the river estuaries, which are very justly reckoned as sea fishery, and treated as such in official documents of the present day.

Zuider Zee fishery has come in for a share of attention proportioned to the small area of the water so called, but perhaps rather short of the historical interest inherent to the trade and the measures taken respecting it. Even as regards deep sea fisheries, many details, a perfect insight into which might have thrown light upon the whole, have not been investigated for sheer lack of time and opportunity. I have, in short, had to be satisfied with the certainty of not having omitted, and a reasonable hope of not having misrepresented, any of the leading historical and actual features of the subject. Such as it is, however, the work contains a quantity of matter drawn from perfectly reliable authentic documents, into which no former writer on Dutch sea fisheries has ever looked, as none of them ever attempted a complete historical treatment of the subject.

There is much about laws in the book, and perhaps less about fishers and fishing. I have taken the centre of gravity of the given prize subject to lie in the former, and made it my business to show, first, what laws were made, and why they were made ; next, what they wrought. For the same reason, herring fishery, the only branch which has been constantly legislated on down to twenty-five years ago, occupies a very prominent place in the following pages. The former and present proportions of the business would perfectly warrant the pre-eminence if nothingelse did.

Many details will perhaps be more interesting to the Dutch than to the British reader. The latter, I hope, will remember, that if a work like this is ever read at all, the chances are that it will be read most by the men who can trace in it some of the thoughts and actions of their own ancestors.

A. BEAUJON.

April 18th, 1883.

THE HISTORY OF DUTCH SEA FISHERIES.

PART I.

SEA FISHERY IN THE NETHERLANDS BEFORE THE ESTABLISHMENT OF THE DUTCH REPUBLIC.

ANYBODY may conclude from a slight survey of a map of the present Kingdom of the Netherlands, that the sea must at all times have supplied food to its inhabitants. The country is bounded by the North Sea on two sides ; a gulf called Zuider Zee runs far inland and multiplies the extent of its sea-shore ; and both this outer and inner sea are pregnant with fish of several kinds. The several river estuaries supply a number of ports and roadsteads for fishermen's vessels ; for those river mouths, whose shallowness was until a few years ago a serious obstacle to the development of modern steam navigation in the Dutch ports, and has accordingly had to be artificially corrected in several ways, at the cost of many millions, afford, and have at all times afforded, plenty of depth for the largest of fishing craft. A glance on the map along the sandy and havenless North Sea coast north of the rivers will, moreover, at once show the existence of several villages separated from the fertile part of the country by leagues of sand-downs, and which, therefore, can never have had

another source of livelihood than such sea fishing as may be carried on in vessels having no keel, and liable to be put ashore on the beach at every tide.

Sea fishing has accordingly been mentioned as a means of existence of the inhabitants of these countries by the very earliest writers. The early history of the Dutch sea fisheries is, however, fragmentary for lack of documents. Some writers mention herring to have been first caught and eaten by the Dutch in the year 1163.* But this statement can scarcely be exact, for it is likewise stated that fishermen from Kampen and Harderwijk, being two small seaports on the Zuider Zee, used to fish for herring "off Sconen," i.e. on the shores of the Baltic, before the end of the twelfth century,† and the trade must have been carried on for a considerable time before so far developing itself as to be exercised at such a distance from home. The first document on record relative to Dutch trade on the Baltic shore is a privilege granted to the men of Amsterdam by the Lords of the Germanic Order of Livonia in 1277, and confirmed by the Bishop of Livonia in 1495.‡

This privilege, indeed, does not especially mention the right of fishing; it contains simply a general promise of protection to merchants from Amsterdam in the Livonian dominions. But it has probably, judging by the unrestricted terms in which it is drawn up, been of avail to fishermen as well as to traders, inasmuch as a similar privilege granted to the men of Amsterdam, Enkhuizen and Wieringen by King Albert of Sweden, in 1368,§

* Semeyns' *Corte beschrijvinghe over de Haringvisserije in Hollandt*, p. 1. The same date is mentioned by a writer in the periodical called *Den Koopman*, vol. i. p. 349.

† Boxhorn, *Tooneel van Hollandt*, p. 234.

‡ Luzac, *Hollands Rijkdom*, vol. i. Appendix B.

§ *Ibid.* Appendix C.

explicitly allows the said merchants to have their own boats and implements "of fishery in Schoonen aforesaid, and use them and fish at will, paying a tax of half a Schoonen merk on each boat, and no more." A certain toll on herring imported by Dutch fishermen is established by the same edict. There were regular and privileged markets for herring and other fish in the Netherlands even before this period; such market rights were granted to the town of Brouwershaven in 1344, and to that of Naarden in 1355, by the Counts of Holland then reigning; and in 1388 another fish market was established at Katwijk, a village on the North Sea coast.* The fact of Dutch sea fishery having had considerable extension in the latter part of the Middle Ages is further placed beyond doubt by an order issued by Edward I in 1295,† by which the said King "having understood that many people from Holland, Zealand, and Friesland, who are our friends, will shortly come and fish in our sea off Yarmouth," lays his commands in "*custodi orae maritimae suae Fernemuth* and *Baillivis suis de Fernemuth*," to see that these foreigners be treated civilly, and not molested, robbed, or plundered, by the king's subjects.‡

Such scanty documents as these are all the footing on which a notion of the extent of Dutch sea fisheries can be based, up to the end of the fourteenth century. But, records failing, it may be assumed as certain that their produce cannot have gone far beyond the necessities of immediate home consumption, so long as no proper method of pre-

* Van Mieris, *Groot. Charterboek der Graven van Holland, Zeeland*, (enz.), vols. ii. pp. 688, 826, and iii. pp. 498-9.

† Luzac, *Hollands Rijkdom*, vol. iii. p. 57. v. Mieris, *Charterboek*, vol. i. p. 566.

‡ Luzac, *Hollands Rijkdom*, vol. i. p. 136.

serving fish was in use in these parts. Fish, indeed, and herring especially, must have been salted from the very earliest times, or there could have been no possibility of catching them off Yarmouth and in the Baltic and carrying them home, in probably slow sailing vessels, with any chance of finding a market for them. Salted herrings are accordingly mentioned in a charter of Louis VII. of France, dated 1179, and, as regards the Low Countries in particular, a regulation dated 1177, and issued by Margaret of Alsatia, Countess of Flanders, on the manner of salting herring, was preserved in the town of Ostend as late as 1816.* But there is an immense distance between packing or strewing fish with salt so as to preserve them for a short time, and curing them so as to last for years and become an article of foreign trade.

The man who in any country first found out the latter method, and thereby first opened up the possibility of lucrative sea-fishing on such a scale as considerably to exceed the wants of immediate home consumption, may therefore be truly called the father of such a country's sea fishery.

The Netherlands' history records the name of such a man, which accordingly is till this day known to every school-boy in the country as that of one of the nation's benefactors. But history unfortunately does not yield much information about him beyond his name, which was William Beukelsz, and his dwelling-place, which was Biervliet, now a village in the southern part of the province of Zealand.

Volumes of subtle inquiry and learned controversy have been written about this personage, among which the above-quoted paper, read in the Brussels Academy of Science,

* Raepsact, *Note sur la découverte de caquer le hareng*, p. 6.

in 1816, by the celebrated Belgian politician Raepsact, is perhaps the most concise and interesting. But the prevailing feature of these many disquisitions is the extreme scantiness of the facts on which they are based. Beukelsz is universally stated to have lived at Biervliet about the middle of the fourteenth century, and been a "Stuyrman," or skipper, and concerned in the herring fishery. The year of his death has especially been the subject of much controversy, being stated by some to be 1347, by others 1397, and by a few 1401. His family are proved by deeds still extant to have been citizens of wealth and note, and his coat-of-arms is said to have consisted of two crossed "kaeckmeskens," or knives used in curing herrings (*kaken*) after the manner invented by him, and to which his name will be for ever attached. But how or by what circumstance he lighted upon his great invention is utterly unknown.

The operation called "*kaken*" is still in use with the Dutch herring fishermen, pretty much, it would appear, as first practised by Beukelsz. It is described in the same constant terms throughout Dutch history, and consists in opening and gutting the fish the moment the net is hauled aboard, salting them carefully, and packing them in barrels in a peculiar manner highly favourable for their conservation. The barrels used were anciently called "*kaccken*," or "*kacckjes*," and the name of the curing process is probably derived from theirs.*

With further regard to the great inventor's person it is stated by all his biographers that the Emperor Charles V.

* N.B.—I am not aware of an English term for the method of curing here described. Whenever, in the course of this work, the words "*corage*" and "*cure*" are used without a further expletive, they will stand for curing in Beukelsz's fashion, or "*Kaken*."

visited his tomb at Biervliet in 1556, and there offered up prayers for the benefit of his soul. The sepulchre must have been an apocryphal one, or at best a cenotaph; for it is tolerably well established that the whole of the town of Biervliet of Beukelsz's time, including the church where he may have been buried, was destroyed by floods between the period of his death and that of the Imperial visit, the place having since then been rebuilt in a safer spot. Whether the Emperor may have been acquainted with the circumstance or not, his act of devotion is an instance of the deep veneration in which Beukelsz's name was held by his countrymen for centuries—a circumstance which may have induced Charles V., even after he had surrendered the government of the Low Countries to his son, to perform a demonstrative ceremony highly gratifying to his former subjects of Flanders and Holland, for whom he always had a strong predilection. If so, he succeeded; for whenever Beukelsz's biography has been entered into, the writer never omits to mention the Emperor's posthumous homage.

Whatever may have been Beukelsz's real character or his true merits in the case, it appears that about the time of his invention, his countrymen, the Zealanders, were the greatest herring fishermen of the Netherlands,* although, as shown above, the most ancient evidence of extensive sea fishery is relative to the more northerly provinces as well as to them. The Zealanders appear, however, to have lost their pre-eminence in the business soon afterwards, and writers of later date attribute this falling off to their having taken to the still more lucrative one of privateering. An important change in the annual migrations of the herring shoals, which about this period left the coasts of Denmark and Norway and began to concentrate about

* *Den Koopman*, vol. i. p. 237.

the shores of England and Scotland, may likewise have had something to do with the decline of the Zealand herring fishery.* At any rate, the next considerable progress in the fishing art was accomplished by men from the North; for it is stated that the first large herring-net was made at Hoorn in 1416,† and though the dimensions of this net are of course unknown, its fabrication appears to have contributed much to the rise of the trade. Leastways the latter became an object of legislation and warlike protection soon after the said period.

John Duke of Bavaria and Count of Holland issued regulations on the fabrication and marking of herring barrels and the curing of herrings in 1424.‡ Though no historical mention of cod fishery is made at the time, this branch of the fishing trade must also have been then practised to a certain extent; for the two great political parties which divided the country under the Counts of the Bavarian dynasty took their *noms de guerre* from it. The Bavarian coat-of-arms bears some resemblance to the scales of a codfish, and the followers of the first count of that dynasty, who wore his colours, were accordingly nicknamed *codfish* (*Kabeljauwen*)—an appellation from which the opposition party took occasion to style themselves *Hooks* (*Hoekschen*), and thereby transmitted to posterity a certain proof that cod was fished for in this period, in something like the manner in which it is caught to this day.

* This reason is alleged on p. 12 of the Committee's Report of 1854. But without further adstruction it is not apparent why the Zealanders could not fish off Yarmouth as well as off Sweden and Denmark.

† Velius, *Chronijk van Hoorn*, pp. 32-3. Brandt, *Historie der vermaarde Zee- en Koopstad Enkhuizen*, p. 17. Wagenaar, *Vaderlandsche Historie*, iii. p. 499.

‡ v. Mieris, *Charterboek*, vol. iv. pp. 728, 739.

The Sovereigns of the Burgundian dynasty established, or confirmed, a special tax, called *last-money*, to be paid by Dutch herring fishermen as a contribution towards the equipment of the convoying ships provided for their protection. Another edict dating from the Burgundian period prohibits herring caught by the Duke's subjects to be sold in foreign ports; and another was enacted against the salting of herring in barrels before St. Bartholomew's Day, or August 24th, and the use of salt other than of certain prescribed qualities.*

Besides this evidence of the herring fishery having had considerable importance in the course of the fifteenth century, the fact is established by a remonstrance, or memorial, delivered to the Grand Council at Malines, by the inhabitants of Brielle, in 1476. This document states herring fishery to be one of the nation's principal industries. An edict relative to trade in herring barrels, dated June 24th, 1495, has also been preserved,† in which an annual meeting of delegates of those concerned in the herring fishery is ordered to take place at the Hague, to confer on the trade's interests, as long as such conferences shall be found necessary. Beyond such general indications as these, however, no clue to the extent of the Dutch sea fisheries in the course of the fifteenth century is to be found. A placard emanated under the Emperor Charles V., on May 18th, 1519,‡ and "being very great," as its title says, inaugurated systematical legislation on sea fisheries in

* See Mr. van Limburg Brouwer's collection of *Boergoensche Charters*, pp. 51, 57, 59, 82, (1439 and 1440).

† *Eerste Memoriaelboek's Hofs van Hollant*, fol. 451.

‡ *Placaet ende Ordonantie of 't Stuk van den Haringvaert, 't branden van de tonnen en 't zouten van den Haringh, wesende seer groot*. Derde Memoriaelboek van den Hove van Hollant, fol. 114, verso).

the Dutch provinces. The practice of *branding* barrels, in which Dutch herring laws have centred ever since, was first made obligatory by this law, and it is very remarkable that the principal warrant for the quality of the *fish* was as yet looked for in that of the *barrel*. The obligatory brand certified nothing but the latter, and stamps indicative of the quality of the fish were facultative, except in so far as early herring was to bear a peculiar mark. The principal contents of the edict are as follows :—

Every barrel of herring brought to market is to be provided with two marks or *brands* ; the first to be apposed by the cooper who made the barrel, and the second by the master of the vessel on board which it was filled. Assayers (*keurmeesters*) are to be appointed in each town and village from which fishery is exercised, to control the brands ("*omme den brand te regeren*"). The attributions of these officers, however, involved a control over the barrels only, *not* over the quality of the fish. They were to test the materials and construction of each barrel, and keep a register of brands, stating the name of each brand's owner. The brand, in accordance with its meaning, was called *barrel-brand* (tonnebrand). None but new barrels were to be used ; and it was prohibited to "carry to herring," i.e. to take to sea for the fishery, empty barrels already used. Besides the obligatory brands certifying the quality of barrels, towns anxious to secure a high renown for their produce were allowed to have a peculiar town brand (here called *back-brand*) apposed to the barrels exported from them as a certificate of the quality of the fish. This faculty was largely used, as will be shown hereafter.

No other salt was, by the law of 1519, allowed to be

used for salting herring than either "salt sodden from salt" (meaning *refined*) or "moor-salt." * Lisboa salt was excluded—a fact the more remarkable as no other than Spanish or Portuguese salt was allowed to be used in later years. No salt was allowed to be taken on board a herring ship unless covered by a certificate as to its quality; and skippers were to be sworn in against breach of this rule, which was considered extremely important. Four barrels of moor-salt, or five and half of "salt from salt" were to be used for one last of herring; whence it is evident that the curing qualities of the former (styled either "*moer-zout* or *zout van zelle*") were even stronger than those of refined salt.

The quality of the herring and its packing are next regulated to some extent in the law of 1519. Herring caught before St. James's Day (July 25) is prescribed to be packed in separate barrels, on which a peculiar brand representing a "St. James's shell" (*St. Jacob's schelp*) is to be apposed. Skippers are ordered to observe peculiar "diligence" in the packing of all sorts of herring, and to have the fish carefully disposed in layers, and on no account poured out of the basket into the barrel in heaps.

* *Zout van goeden graauwen zelle*. These words refer to a peculiar industry now extinct since centuries. In the alluvial grounds of some of the Dutch river mouths, which are covered by sea-water at every tide, a kind of briny moor or turf (*darinck*) was formerly found in great quantities. This substance was burnt, and its ashes, when moistened with sea-water, yielded a peculiarly fine gray salt. This moor-salt-making industry (*zelle-neeringhe*) was of course exercised only about the mouths of the rivers, especially at Zierikzee. Boxhorn (augmented edition of *Reijgersbergen's Chronijk van Zeelandt*) describes the whole process on page 114, and adds: "No other salt than this was in times of yore used throughout the Netherlands." An engraving representing the digging and burning of "*darinck*" is to be found in Wagenaar, *Vad. Historie*, vol. iv.

Herrings of different quality, such as full, lean (*ijdel*), spawn-sick, and damaged (*wrack*), are to be sorted, and each description packed in separate barrels, which are to be kept asunder from the rest. But *there are as yet no separate brands* for these several qualities; and all dealers, when disposing of any herring, are enjoined to declare it to the buyer as either "full and sweet" or of inferior quality. While at sea, herring already barrelled is to be pickled, or moistened with sea-water every fortnight; whence the name of "pickle herring" (*pekelharing*) still applied to the fish salted at sea. Herring caught in the Y,* as being generally of inferior quality, is not allowed to be salted and exported, but kept for home consumption, and smoked to *bucking* when carried ashore. This is perhaps the first evidence of the existence of the smoked herring industry in these countries, and certainly the first vestige of the Grand Fishery's curing monopoly of later days. In order to enforce the rigid execution of these rules, all fishing skippers are enjoined, before dismissing their crews, to make them declare upon oath before the competent magistrate that no infraction whatever has been committed during the voyage.

This placard of Charles V. may, as already remarked, be considered as the beginning of the era of working regulations on herring fishery—an era which has lasted until twenty-five years ago, and witnessed the immense prosperity of the business, but also its most profound decline. The placard of 1519 has been often renewed, or quoted in laws of later date as the original statute on the subject. It is not, however, until a few years after its date that anything like a connecting link between the several

* An inlet of the Zuider Zee, formerly the only access to Amsterdam by sea, now drained and traversed by a canal.

facts and laws on record may be traced, by the resolutions of the States of Holland, of which a register has been kept from the year 1524 downward. As the province of Holland has always been prominent in fishery as well as in all other seafaring trades, this register is indeed the principal source from which the history both of sea fisheries and legislation relating to them may be constructed, down to the present century.

Under the government of the Emperor Charles and his son King Philip of Spain, the main feature of the fisheries' history is a succession of quarrels about money. The Sovereign wanted to raise money from the fishermen towards the equipment of convoying ships for the herring fleet, and wanted it, not in the shape of temporary subsidies, but in that of a permanent tax, as to the employment of which control would of course be inefficient. Against these pretensions the fishermen's attitude was one of constant grudging and reluctant granting. Continuous wars in the meantime occasioned constant need of efficient convoy, and kept the money question in the foreground as a subject of unceasing and painful wrangling, in the midst of which, however, the trade somehow managed to prosper. Such was, in outline, the course of affairs from the beginning of the domination of Charles V. and his successive deputies, down to his son's ultimate deposition from the sovereignty, i.e. for more than sixty years.

The wars between the Emperor and France first brought this convoying question into open dispute. The French, indeed, used much forbearance, and their admirals were in the habit of offering *sauf-conduits* for sale to the Dutch herring fishermen, subjects of a sovereign at war with theirs. These *sauf-conduits* were purchased by many for a consideration of fifteenpence per head of the crews

for the cod-fishing vessels, and of twenty-five for the herring busses.* Still much damage was done to the herring fishery by the enemy, especially in the fishing season of 1537, to the effect that those who had not bought *sauf-conduits* complained of the straits of the war, and those who had were discontented about having to pay the enemy for protection which, in their estimation, was due to them from their own Government. A plan for equipping and arming six of the busses so as to be in a condition to serve as men-of-war in time of need was advised by the Emperor and much discussed in the States of Holland at the time, but suffered to drop, mainly because the shipowners who had taken out *sauf-conduits* from the enemy declined to contribute towards the costs, on the plea that such a measure had become useless. Thus, by the Government's inaction and dissensions among the parties concerned, part of the fleet remained at the enemy's mercy; and in the year 1543† the coast was infested by French privateers to such an extent that both traders and fishermen found it impossible to sail without facing imminent danger. Delegates from the fishing towns and villages met at the Hague and discussed the expediency of taking their protection into their own hands; but they did not come to a conclusion, although Government, in order to induce them to fit out their own convoy, resorted to a threat of prohibiting the fishing for the next season. In the States' sitting of May 20th, 1544,‡ the town of Schiedam's representatives again broached the convoying question;

* *Resol. van Holland in Aert v. d. Goes' Register*, 1537, p. 279, sqq. Cf. a Placard of Sept. 18, 1536 (2° *Memoriaelboek van Mr. J. de Jonge*, fol. 62, verso).

† *Resol. v. Holland, in Aert v. d. Goes' Register*, 1543, p. 357.

‡ *Resolutions of the States of Holland*, 1544, p. 30.

and as the war with Scotland added to the fishermen's distress, the point was a subject of frequent resultless deliberations in the next years. In 1547 another fruitless appeal was made to Government, who were content to advise the fishermen to equip one-tenth of their boats as ships of war,* and at last, on June 11th, issued a prohibition to fish, to last till September 1st.† This induced delegates from three of the towns most concerned, Dordrecht, Amsterdam and Rotterdam, to crave an audience from the Queen,‡ and earnestly speak up for their interests. The Emperor, they said, had been granted taxes or supplies (*beden*) by the States under promise of all available protection to the country's mercantile and industrial interests; and he therefore owed the fishermen such covering by ships of war as should enable them to fish in safety without any special contribution on their part. Having met with a flat refusal, for which the Emperor's distressed finances indeed gave the most stringent of reasons, the delegates came to terms, and after some protracted negotiations the States of Holland at length, in 1548, granted six thousand florins towards the equipment of five convoying ships. These, however, were not yet ready on the 9th of August, when a prohibition was issued against any busses sailing till the convoy should be ready to put to sea, involving the loss of the best part of the fishing season.§

The States' tardy concession by no means put an end to the disputes. What Government wanted was not a grant

* *Res. Holl.* 1547, p. 186.

† *Eerste Memoriaelboek's Hofs van Holland, van Mr. Jan van Dam*, fol. 256. Cf. Wagenaar, *Vad. Hist.* v. p. 297.

‡ Mary of Austria, Queen of Hungary, appointed governess of the Dutch provinces by her imperial brother, in 1530.

§ *Eerste Memoriaelboek van Mr. Jan van Dam*, fol. 344, verso. See *Res. Holland*, 1547 and 1548, p. 197 sqq., and 245 sqq.

of money for one year, but a perpetual tax under the name of last-money, such as had formerly been levied by the Dukes of Burgundy. To obtain this, prohibitions against fishing were again threatened in 1549, whereupon the States offered a gratuity of tenpence on the last of herring for the current season only.* The offer was at once rejected, the Queen demanding "not a gratuity, but a tax." Holland then doubled its offer† on the 29th of August, 1550, and last-money was accordingly levied from the fishermen of the province to the amount of one florin per last of herring caught, Zealand having before granted two, and the men of Flanders consented to equip convoying ships at their own expense. The tax was granted again in the next year, when a prohibition against fishing was issued notwithstanding, to which, however, little observance seems to have been paid.‡

The armed protection thus obtained by the States at the fishermen's expense was very ineffectual. The Imperial convoying ships appear, indeed, to have been utterly inadequate to their task. They could neither cover the whole of the herring fleet, nor be of any use to the busses sailing home with their cargoes; they could not even keep the sea in rough weather, but had frequently to make for the nearest port and leave the fishermen to their destinies. The States, therefore, towards the beginning of the fishing season of 1552, begged the Queen to give up convoying and get safe conducts for the busses from the King of France.§ A similar request was made in 1553,|| when the shipowners

* *Res. Holland*, 1549, p. 288.

† *Idem*. 1550, pp. 372-380.

‡ *Res. Holland*, 1551, pp. 415, 431; Wagenaar, *Vad. Hist.* v. p. 368.

§ *Ibid.* 1552, p. 454; Cf. Wagenaar, *Vad. Hist.* v. p. 377.

|| *Ibid.* 1553, pp. 484, 504.

even offered to sail without any protection from Government, and arm some of their vessels for war, so they might be freed from last-money. But the offer was rejected. The Imperial Government was ready, if needed, to send out some worn-out ships of war after the herring busses, and would not give up the tax, part of the produce of which may be confidently supposed to have gone to the Imperial coffers instead of being employed for the purpose it was granted for. Accordingly, the last-money, which had been granted by the States at two florins per last of herring in 1552,* was demanded to the amount of three for 1553; and when refused by the States, a prohibition to sail without convoy was once more resorted to on the 30th of May, in order to enforce acquiescence.† The quarrel on the subject between the States and the Queen Governness rose higher as the fishing season approached,‡ but was brought to an accord; for a few days before the sailing term, the Queen's consent to the shipowners sailing at their own peril, and equipping their vessels for armed resistance in case of need, was notified to the States.§

A placard issued July 30th, 1553, and "ampliated," on July 5th of the next year, determines the number of cannon, pikes, swords, and the quantity of ammunition to be carried on board each fishing vessel, subject to inspection before sailing. The extent of the armament was in virtue of these placards (4^e *Mem.-boek v. Dam*, fol. 117, 232) to be proportioned to each vessel's size, the largest mentioned being forty lasts; and the amount of warlike preparation

* 4^e *Memoriaelboek v. Dam*, p. 260.

† *Ibid.* p. 91, verso.

‡ *Res. Holland*, June 14th, 1553, p. 506.

§ *Ibid.* July 19th, p. 512.

prescribed is such as to constitute a heavy charge upon vessels of such a capacity.

It would be tedious to pursue the further course of these money quarrels between Sovereign and subjects, which, as said above, lasted intermittently as long as the House of Austria held sway in the Dutch provinces. The depressed condition of the fisheries under these circumstances is testified to, not indeed by any statistics, but by several legislative acts. Desertion was of frequent occurrence among the seamen hired for service in the herring fishery, as appears from several edicts against it. The business was subject to immense risks of war, and crews were difficult to hire, and apt to disband when hired, as their duty on the armed busses was more of a soldier's than a fisherman's, and "shooting" and "fighting" are mentioned in several placards as a part of their customary work. Shipowners were often tempted to sell their boats and fishing gear abroad, as appears from prohibitions against such sales;* and, while forced by Government to keep their vessels in the concern, were during a series of years repeatedly annoyed by prohibitions against sailing without a Government convoy, which appears to have been seldom or never forthcoming in due time. Frequent grants of money made by the States to shipowners or their representatives, in order to enable them to cover losses and repair damages, likewise testify to the trade's depressed condition as a result of the Sovereign's unceasing wars. Not only did these wars expose the fishermen to constant danger, and occasion frequent extortions of grants from them; the fact of the Sovereign being at war with one half of Europe also gave rise to prohibitions against exporting fish, which

* Placards of July 22nd and Sept. 12th, 1553; 4° *Mem.-boek*, v. *Dam*, fol. 112, 126, verso.

of course depressed the markets and occasioned bitter remonstrances at the hands of the parties concerned. Working regulations on fisheries must in these evil days have greatly contributed to the trades' depression; for being, one and all, calculated to warrant the excellence of the fisheries' produce with a view to secure the foreign markets at the cost of severe restrictions upon the industry's liberty, their favourable effect of course was lost in times when many markets were closed, and their only result was to clog the fisherman and preclude him from taking instant advantage of such favourable conjunctions as might occur.

Such working rules were indeed issued with an unsparing hand both under Charles V.'s and his son's government. It has been shown that under the placard of 1519 herring was allowed to be caught and cured before St. James's Day; and the beginning of the season seems to have been left to the fisherman's discretion.

A prohibition to fish for herring before St. James's, or the 25th of July, seems to have been first thought of in the year 1526, when it was adopted by the States of Holland upon the advice of all the towns concerned in the fishery, Amsterdam alone excepted.* But this enactment was at once complained of on the plea that, not being applicable to the French fishermen, it would put the Dutch at a disadvantage against them. A sharp debate occurred on the subject in a meeting of delegates from Holland, Zealand, Friesland and Flanders, on March 12th, 1526, when by way of a sharp taunt, the Flemings were upbraided with having sold early herring at a low price, which imputation they at once declined in indignant terms. The Northern delegates persisted in the new rule; and the matter was

* *Res. Holland, in Aert v. d. Goes' Register*, p. 35.

laid before Our Gracious Lady Margaret of Savoy, then Governess of the Netherlands, in the name of the Emperor She, however, declined to enforce the new prohibition in the province of Flanders, upon which the towns of Delft and Schiedam likewise refused to observe it, which the other fishing towns of Holland and Zeeland were content to do by way of an experiment.* The question was again moved in May, 1528, between the delegates of Holland, Zeeland, Brabant, and Flanders;† but no agreement was come to, and herring fishing appears to have gone on both before and after St. James's, until the Emperor prohibited the former by a placard dated June 24th, 1536,‡ and thereby sanctioned the principle that no early herring was to be caught or sold by Dutchmen, which has since been religiously observed as a fundamental fishery law. It should be noted that initial dates for herring fishery have been frequently shifted. About the period now spoken of, a Burgundian law prohibited herring to be salted, i.e. to be caught, before August 24th. A period of liberty as to the date came next; it was fixed at July 25th, in 1536, and shifted more than once in latter years, until definitely appointed on June 24th. *Variations in the annual migrations of the herring shoals* must have occasioned these several alterations of laws.

Besides the edicts just now referred to, police regulations for fishing vessels were issued by Charles V. on August 4th, 1545, and July 9th, 1546, and renewed by his son Philip on the same day of the year 1564. This edict, which was afterwards re-edited by the States, in the King's

* *Res. Holland, in Aert van d. Goes' Register*, pp. 38, 39.

† *Ibid.* p. 80.

‡ *Tweede Memoriaelboek's Hof's van Hollant*, fol. 43.

name, on April 26th, 1578, and March 9th, 1580,* contains dispositions against the stealing or destroying of nets, &c., which prove the fishermen, three centuries and a half ago, to have been similarly addicted, in the way of petty piracy, as they appear to have been until the late International Convention. Besides penalties against such piracy, sailing orders to hoist certain signals by day and night while the nets are overboard, and to straighten the helm for fear of getting caught in them, and regulations as to the treatment of fishing gear lost at sea, are found in these statutes. Whoever finds a "fleet," or set of nets, afloat and unowned, and hauls it aboard, is enjoined to carry aloft as many empty herring baskets as there are brails on the nets found; and with these baskets in his rigging, as a sign that he has another man's nets on board, the finder is obliged to sail till their owner has claimed them, in default of which he is to hand them over to the nearest magistrate on coming into port. It is easier to issue laws of this nature than to enforce them; and the several renovations of the placards in question make it very probable that Dutch fishermen were in the course of the sixteenth century by no means averse to make free with the property of friend and foe when occasion offered, or destroy it if coming across their own. It would indeed appear that fishermen, who live by appropriating the unowned and masterless treasures of the sea, are easily brought to stretch the principle a point or two, and appropriate objects which have distinct masters

* *Groot Placaetboek*, i. pp. 684-91. The placards of 1546, 1564 and 1578 have been registered by the Court of Holland, and are to be found in their memorial books (1st *van Dam*, fol. 198; 3rd *Ernst*, fol. 173; 7th *Ibid.* fol. 236). It appears from the exordium of the placard of 1580 that both this and that of 1564 were renovations of another dated August 4th, 1545.

and owners ; whence the North Sea has for centuries been the theatre of a *bellum omnium contra omnes*, which the legislation of all countries has till now never succeeded in thoroughly restraining. The constant presence of conveying ships with the busses did not prevent abuses of the above nature ; nor was this end attained by a more stringent measure enacted in most of the placards just named, viz. the skippers' obligation, when home from a voyage, to have three or four men out of their crews examined upon oath by the competent magistrate as to damage done to others or suffered at their hands, or other breach of statute committed.

Besides police and working rules, taxes were frequently applied to the herring fishery by the Austrian lords of the land. Last-money, which we have seen exacted by a proceeding little short of actual compulsion towards the end of the first half of the sixteenth century, and which was then reluctantly granted, "in the hope of its being for the last time this year,"* became, on the contrary, a perpetual tax, the amount of which was determined annually, and varied accordingly as the Government's wants were greater or lesser, or the occasion for conveying ships more or less pressing. The tax, however, never exceeded two florins (or "pounds of twenty pence") till the end of the century. To this tax, originally a retribution for convoy, an excise duty on herring was added in 1571,† amounting to twopence on the barrel, to be paid by the last seller. A third tax, the exact nature of which I have not been able to ascertain, is mentioned about 1555 by the name of tithe or tenth penny ("*tiende penning*")

* *Res. Holland*, 1550, p. 172 and following.

† *Ibid.* 1571, p. 512.

of all herring.* The levying of this tax was deferred to William of Orange, appointed Stadtholder, or Lord Lieutenant, of Holland, Zealand, and Utrecht, when King Philip left the country after the peace of Cateau Cambresis, in the spring of 1559. If the youthful Lord Lieutenant ever levied this tithe at all, he certainly did so with exemplary leniency. Upon taking charge of the Provinces' affairs he found the tax considerably in arrear, as appears from a resolution of the States of Holland dated June 6th, 1559,† by which they begged to know the herring fishery's returns for the years 1553 and 1557, in order to determine the amount due as tithe for the said years. The Prince answered their request by a prayer to suspend the recovering of the tax till his Highness's return from France, and it was still due in 1561,‡ nor have I found any positive evidence of its having ever been recovered at all.

A very different method of drawing money out of the fisheries was pursued by the Spanish governors. The Duke of Alva, who was sent to the Netherlands in 1567 with orders to put down heresy and generally break the country to the iron Spanish rule, first obtained a loan of 28,000 fl. from the States in 1571,§ by a menace of withdrawing the fishermen's convoy if the money were not forthcoming. The exaction was the worse, as the inefficiency of Government convoying ships was as bitterly complained of about this time as twenty years before, and the Commissioners of the herring fishery, of whom more anon, were obliged to equip men-of-war for their safety at

* Wagenaar, *Vad. Hist.* v. p. 386. mentions this tax to have been first exacted in 1553; but is not at all sure about the matter, and abstains from giving particulars.

† *Res. Holland*, 1559, p. 289.

‡ *Ibid.* 1561, p. 483.

§ *Ibid.* 1571, p. 569.

their own expense in 1570, and sued for a loan from the States in 1571 in order to do the same during the fishing season of that year.*

Fresh taxes to the fisheries' detriment were exacted under the terrible Duke's successor in 1575, when a twentieth penny, or 5 per cent. duty, was ordered to be levied on all fresh fish brought to market in the towns and townships of Holland, and a new excise duty of sixpence per ton of salt fish was moreover established, to be paid by the buyer during the four months succeeding the 1st of March.†

Whatever may have been the fisheries' condition in these times of violent warfare and constant danger, it is evident that they were never entirely stopped, though it may be readily assumed that many fishing vessels and crews left the nearly unprotected trade and joined the bold privateers, who, under the name of "Watergeuzen," took a prominent share in the military events of the time. Still, requests of the fisheries for either subsidy or protection are of annual occurrence even in this period, as proofs of the fisheries' continuation; and it is indeed a strong instance of the trade's vitality that it was never completely given up in years when fishing vessels were constantly beset by many enemies, and never obtained anything like efficient protection.

The year 1575 marks the beginning of a new era for the sea fisheries of Holland and Zeeland. The sovereigns of the house of Austria and their several lieutenants had generally considered fishermen and shipowners as subjects from whom considerable sums might be extracted under promises of protection which never was efficiently given. No sooner, on the contrary, did the Prince of Orange take

* *Res. Holland*, 1571, p. 555.

† *Ibid.* 1575, pp. 88, 108, 113, 123.

the provinces' government into his own hands after the revolution's first successes, but the fisheries came in for Government's most earnest solicitude, and were treated as so important an industry deserved. Up to the said year, the point at issue between Government and fishermen had been, who should obtain most from the other and do least for him. The situation at once became the reverse when a national government was virtually established, and a ready willingness to do their utmost for the trade's benefit prevailed on both sides.

This altered state of things was first clearly seen when, towards the beginning of the herring season of 1575, William of Orange called a general meeting of the fisheries' delegates, and earnestly represented to them the expediency of sustaining their trade by their own energy at any cost, as the state of the country's affairs for the moment left no possibility of effectual Government assistance.

A body representative of those concerned in the herring fishery, which in 1575 was recognised by the Prince as a semi-official institution, had in truth borne such character long before. The herring shipowners' habit of appointing some of themselves to forward their common outward interests appears indeed to have been about as ancient as the trade itself, inasmuch as "the common merchants" of certain towns of Holland are mentioned as grantees of privileges extending to the fishery, in the edict of Albert King of Sweden (1368), which has been mentioned above. An organised body of local fishery committees, however, does not appear to have existed before the middle of the sixteenth century, when such an organisation seems to have been the result of constant need of common defence against both enemies abroad and Government exactions at home. A committee of the herring fishery is first mentioned

in 1548, as having conferred with a Government officer on the ways of furthering the herring fishery's interest.* In 1556,† the same Board, or Corporation, gave a receipt for moneys granted by the States for the trade's benefit; it was then composed of the Burgomasters of the several towns and townships where herring ships were owned, viz. Delft, Rotterdam, Schiedam, Brielle, Enkhuizen, Wormer, Jisp and Grootebroek. About this period requests for subsidy and convoy to the herring ships are generally mentioned as having been preferred by "the fishery," "the common fishery," or "those of the fishery;" and the variations in the name by which the corporation was designed at the time confirm the supposition that its existence as a recognised public authority cannot date from a period much anterior.

At any rate, they held considerable official power and responsibility at the time mentioned. The delegates of Delft, Enkhuizen, Brielle, Rotterdam and Schiedam in 1558 agreed to an "accord"‡ by which the fishing boats of the coast villages were bound, in return for the enjoyment of warlike protection, to pay into the hands of the Delegates' Commissioners such a sum per ton of fresh herring sold either at home or in England, as should be appointed by the delegates aforesaid; and this agreement was ratified and registered by the Court of Holland. By another accord, dated September 26th, 1558,§ and registered by the same authority, the "Deputies of the Herring Fishery" agreed to have every tenth fishing buss equipped for war; the expense of such armaments to be borne by the ten

* *Res. Holland*, 1548, p. 288.

† *Ibid.* 1556, p. 92.

‡ *Eerste Memoriaelboek. B. Ernst*, fol. 136.

§ *Ibid.* fol. 133, verso.

vessels together, forming what is, in very un-nautical style, denominated a *band* (bende). The arrangement must have been short-lived, if ever executed at all ; but it testifies to the public authority of those who made it on behalf of the rest. Again, in 1562, a loan of 10,000 florins was granted to "Deputies of the Herring Trade" by the States of Holland and West Friesland.* They were therefore at the said period a recognised public body qualified to act in the name of all concerned in the trade. A much more extensive range of official qualification was opened to them after the proceedings between them and the Prince of Orange, which, as said above, took place in 1575.

The Herring Commissioners' attitude in this conference is a strong evidence both of their extensive acting powers and the considerable resources of their constituencies, in spite of bad times. The Prince having explained to them the impossibility of any considerable financial aid out of the public exchequer, the delegates, with a readiness strongly contrasting to the reluctant grants formerly wrung from the States and the fishing towns, voted a supply of three thousand Carolus florins for the first month of the fishing season; and two thousand more for each of the three months to follow, the said charges to be borne by the shipowners according to a fair repartition.† Twelve convoying ships of war were to be equipped out of this money, and further funds, in case of insufficiency, to be found out of the custom-house duties (licenten) on herring. But the Commissioners' task did not stop at the granting of money. They were now for the first time to have a fair share in the disposal of it. A committee was to be appointed by the States and the fishers' delegates jointly, for the organisation of the

* *Res. Holland*, 1562, pp. 689, 694-696.

† *Ibid.* 1575, p. 549.

convoying service, the appointment of officers to command the ships of war, and the regulation of all further matters thereunto pertaining.* This agreement between the Prince and the parties concerned was readily ratified by the States on July 5th, 1575,† and the Herring Commissioners were further empowered to levy such last-money on the herring busses as they should see fit, for the gradual reimbursement of the sums advanced; i.e. properly, to distribute the charges of their safety among shipowners as they should judge equitable. Last-money was accordingly decreed to be levied at thirty pence per last of herring in the year 1576,‡ not by the States' collectors, but by officials appointed by the Herring Deputies in each of the fishing towns. Thus the tax, formerly a loathed and hard-grudged Government exaction, took the shape of a contribution willingly granted by the parties concerned towards their mutual protection and safety; and fishing shipowners, as soon as the management of their joint interests was put into their own hands, formed themselves into an extensive corporation and at once proceeded to take the measures most urgently required. It is a fact worth mentioning, as an instance of the national energy of former times, that the whole of the men concerned in one of the principal industries thus organised their business, and readily assumed heavy pecuniary obligations to keep it going, at a moment when every nerve of the nation was strained in self-defence against an overwhelming enemy, and the very heaviest financial sacrifices had to be demanded by Government to keep up a war, the duration and event of which no one could at the time foresee.

* *Res. Holland*, 1575, pp. 550, 551.

† *Ibid.* p. 588.

‡ *Ibid.* 1576, p. 89.

The Herring Committee's official attributes were soon further extended. They had been appointed administrators of their own tax in 1575; they had judicial functions granted to them two years later.

By a placard of May 3rd, 1577,* the States, as in the King's name (who as yet was the legal Sovereign), enacted severe penalties against selling herring or fish† caught by Dutchmen elsewhere than upon Dutch markets, and exchanging them for salt or barrels with foreign fishermen at sea. A resolution of the States of Holland, dated July 12th,‡ appointed the Fisheries Delegates (*"die van de Visscherije"*) to enforce this statute and proceed against all who should infringe it, the fines pronounced to be for the common fisheries' benefit, as a means of ensuring the Committee's utmost vigilance.

Legislation on herring fishery had now gradually become rather extensive. But it was disseminated in divers laws and placards, the observance of which must have been fraught with considerable difficulty, as the method of publishing laws was at this period very defective. This circumstance probably led to something like a codification of the fishery statutes, which took place in the year 1582, after the formal defection of the Northern Provinces and their constitution as a free State. This statute, in which all former ones were resumed, may therefore be considered as the first instance of legislation on fishery under the Dutch Republic.

* *Groot Placaetboek*, vol. ii. p. 2145. The statute was re-inforced on April 26th, 1578, and registered in the 7th *Mem. Boek. B. Ernst*, fol. 234, verso.

† The word *fish* is not used in the ancient Dutch fishing vocabulary for *herring*. "Fish" means other fish, generally cod.

‡ *Res. Holland*, 1577, p. 415.

PART II.

SEA FISHERIES UNDER THE DUTCH REPUBLIC.

THE history of the Republic of the United Netherlands embraces the period of Holland's utmost political greatness. It is likewise in this period that the Dutch sea fisheries reached their culminating point, at which they exceeded those of most foreign nations ; while in the latter days of the Republic the nation's glory and the trade's prosperity were both swept away by the effect of one common cause.

In accordance with the tremendous development of the fisheries, and of the herring trade especially, during the first century of the Republic's existence, both literature and legislation relative to them are plentiful in the course of this period, and a better idea of the trade's importance may be formed than before, when laws, indeed, were frequently made, but facts on record are few. These several circumstances make the republican period a peculiarly interesting part of the fisheries' history.

It is not till this period that some knowledge can be obtained of the different branches of fishery, one of which (the whaling trade) did not exist before, while as to another (the cod business) only a few indications exist during former centuries. The several branches of the fishing business have throughout the Republic been separate concerns, or nearly so. They were carried on under circumstances so different, that laws held necessary for one were never thought of for others. It is therefore advisable to divide this part of their history into several chapters, relative to, 1, the "grand" or cure-herring fishery ; 2, whaling ;

3, cod fishery; and 4, the minor industry of catching fresh fish of different kinds, both in the North Sea and Zuider Zee.

Differences with other nations about the right to fish in certain parts of the sea have been frequent during the period which will be treated in the annexed pages, when as yet there were no generally adopted rules of international law. As these differences were of vital interest to a nation whose fishing vessels once frequented the shores of several States, a brief account of them will be given in a separate chapter.

CHAPTER I.

GRAND FISHERY.

THE distinctive points about the cured-herring fishery under the Republic are the following:—

1st. It was exercised in the second half of the year, chiefly about the coasts of England and Scotland.

2nd. It was carried on in keeled vessels known by the general denomination of busses (*buizen*), the size of which afforded room to cure the herring on board as soon as caught, and thus produce the excellent and easily exportable article for which Holland has long been famous throughout the world.

3rd. It was, by reason of the immense market open to its produce, at one time very far ahead of all other branches of fishery as regards actual importance, and its preservation was one of the chief objects of the Government's solicitude, whence the history of fishery legislation is chiefly that of regulations on herring fishery.

It has been said at the conclusion of the first part of this work, that something like a codification of the laws on

herring fishery was aimed at in the very first year of the Republic's existence. As these statutes have been in vigour, with slight alterations, for two centuries and more, and their influence on the fishery's destinies has been very considerable, it is necessary to expose their tenor at some length.

Part of the fishing code alluded to was indeed anterior to the Republic, being contained in several placards dated March 9th, 1580,* and issued in King Philip's name, though his actual authority had then ceased to prevail in the country, and he was no party to the laws issued, for form's sake, as under his authority. Besides the police regulations referred to at the conclusion of Part I., these so-called Royal placards contain certain rules to be observed in the hiring of sailors for service in fishing vessels, and the relations between them and the ships' masters or "steersmen." The prohibition to carry Dutch herring abroad or dispose of it at sea to foreign fishermen is likewise repeated in one of these Acts. The most interesting part of them is, however, the fixation of the season for "salting herring in barrels," between June 1st and January ult., being a derogation to former placards prohibiting the trade before St. James's Day, which seem to have ere this fallen into oblivion. To preserve the ancient reputation of the Dutch brand-herring was once more the object of this enactment. "Whereas," says the placard, "it has come to Our knowledge that some *for their singular profit* do catch the herring before its season and time, ere they be good and right natural to eat, and salt them in barrels and sell them in the market, though such herrings be quite untimely and often prejudicious to the consumer thereof, thereby causing in

* *Groot Placaetboek v. Hollandt en Westvriesland*, vol. i. pp. 684-691, 696-707, 715-717, 748-751.

these countries not only, but also and in particular in other lands, whereunto herring is carried and diverted, a great disgust, dishonour and contempt of herring, so that the taste for good and timely herring is likewise spoiled, the latter being thereby made unwilling and often remaining unsold along with the bad, to the loss of the merchants, and consequently to the prejudice of the fishery, which is one of the principal mines of our common countries' welfare ; against which sundry abuses wishing promptly to provide, We do well and expressly prohibit," &c. It is a constant and prominent feature of Dutch fishery legislation that people are always forbidden to do what they saw fit to do "for their singular profit."

Legislators never, until twenty-five years ago, could realise the notion that, upon the whole, the fisherman is the best judge of his own interests. Constant infractions of the herring laws, instead of bringing the governing powers and their advisers to acknowledge that to break the law must upon the whole be more profitable than to observe it, only caused them frequently to renew the different Acts, and enact still heavier penalties against transgressors who were uniformly considered as reckless and unprincipled men ready to sacrifice the common interest to the success of their own misdoings. It was considered laudable to seek profit by catching herring, provided the profit should only be looked for where Government pointed it out. All other profit-seeking was a heinous offence.

The same anxiety to maintain the reputation of the Dutch cured herring abroad, which speaks from the above-quoted considerations, also dictated another part of the herring legislation of 1580, viz. the prohibitions against tampering with brands. It has been said in the first part of this work that the branding of herring barrels was ever

since 1519 subject to control by assayers ("*keurmeesters*") appointed for the purpose in each town; and the brand thus constituted an official certificate of the article's excellence. In order to preserve this character, and likewise to protect the Dutch fishermen against foreign competition, it was in 1580 prohibited under severe penalties, firstly, to privately mark barrels containing spawn-sick and other defective herring with counterfeits of the controlled brands, or even with fancy marks,* and next, to pack herring caught by foreigners in barrels properly branded before. The use and even the importing of foreign or unrefined salt † was also prohibited by this Act, and the prohibition was even extended to "small salt" made or refined in the country, which it was forbidden either to sell or use, unless to foreigners and for the purpose of exportation.

But these regulations were not deemed sufficient. The brand inspector's control, which till now only served to warrant the quality of *barrels*, appears not always to have been sufficiently close; and the deputies of the herring-fishing towns found upon inquiry that the quality of both herring and barrels exported under the official brand was sometimes deficient "because of the small control hitherto exercised thereon." Wherefore, "having often been collegially assembled at Delft and ripely communicated on the matter," they drew up a regulation "touching the making, assaying and branding of herring barrels, the time of catching, salting, handling, and packing of herring," which

* Literally, "with ornamented bye-marks or otherwise."

† "Salt not sodden of salt." The "moor-salt," or "*zelle*" highly recommended in the placard of 1519, appears to have been utterly out of use towards the end of the 16th century, as it is not even mentioned in the laws of 1580.

was arrested by the States of Holland on April 27th, 1582,* and is the first instance of Republican herring legislation. The principal provisions of this Act, which has for more than two centuries been the base of all working regulations upon the herring trade, are the following :—

Besides the cooper's private mark, already prescribed by the placard of 1519, a town-brand, which in the said year was admitted in such towns as should see fit to use it, is now ordered to be established in every town where barrels are made. All barrels, whether whole, half, quarter (*kinnetgens*), or eighth part, are to be marked with this town-brand (here called *tonnebrand*) previous to their being carried out of the town. The cooper apposes his own brand, but the town-brand is added by municipal officers or *branders*, under the assayer's supervision. These branders are forbidden ever to let their tools and marking-irons go out of their hands, or send them to the cooper's by their wives, children, or servants. They are enjoined, before branding each barrel, to examine it well and roll it over three or four times containing a certain quantity of clean water, and refuse it if found to leak, or to be worm-eaten, made of light wood, or otherwise defective. No branding of barrels is allowed between sunset and sunrise, and when the brander comes to the cooper's to perform his business, the latter, his wife and journeymen are not to be present at the operation, but keep within call either in the house or a street's width from it, in case the brander should want to show them any defectivity in the barrels. The number of staves to each barrel is to be twelve or thirteen as a minimum, and the dimensions of barrels, staves and hoops,† as

* *Groot Placaetboek*, vol. i. pp. 718–727.

† A standard measure of herring barrels appears to have been kept at Dordrecht. According to van der Lely's *Recueil* (p. 15) the

well as the places where to appose the cooper's and the town-brand, are accurately determined by the law. Branders are allowed to exercise the coopering trade on their own behalf, but they are in this case to have their article examined and branded either by a colleague or by the assayer or "keurmeester" himself. The barrels carried to sea by fishermen are to be either new, or provided with fresh hoops and assayed and branded afresh since last used. The packing of herring and piling up of barrels is ordered to take place either in the public street or with doors open, so as to enable all and sundry to control the execution of the aforesaid dispositions as regards the quality of the barrels used.*

The nature of the salt to be used by fishermen at sea is regulated in detail. Gross salt, if used at all, is to be previously examined by the assayer, and, for full herring caught after St. James's, Bartholomew's, or Elevation day, "small salt sodden from salt" is the only sort allowed. No salt is to be sold, bought, or taken on board, unless accompanied by a certificate as to its quality, delivered at the place of fabrication.

As to the fishery itself, the most important disposition of this Act is the fixation of the fishing season for cured-herring between July 1st and December ult. of each year. The former, or opening date, which had been appointed at June 1st two years before, was again shifted to St. John's

Herring College in 1593 resolved to have the assayers' measures adjusted to this standard, and a general "equalization" of all barrels was ordered to take place in 1624.

* It was commonly done in public; whence probably the name of "Haringpakkery" still applied to one of the broadest quays of Amsterdam.

(or the 24th of June) in 1588 * as an evidence of the uncertainty about, and probably the variations of, the true fit herring-season. It cannot be doubted that by these successive enactments fishermen have often been prevented from exercising their trade at times when it might have been done with a fair result. To bind a business to certain dates and seasons is at all times a dangerous practice in legislation ; but whenever nature shows the fit season for such an industry to be variable, all restrictions ought to be abolished at once. The mere fact that an alteration of laws of this nature is found necessary should be a reason to repeal them altogether ; for there can in that case be no certainty that the new law is better than the old.

The treatment, or mode of handling † herring when caught, is accurately prescribed in the State's placard of 1582. Besides a reiteration of former prohibitions against disposing of herring either abroad or at sea, the masters of herring-busses are enjoined on their responsibility, and under considerable penalties, to see that the fish be laid in the barrels in regular layers, four in length, from bottom to bottom. The packing of bad herring together with good is severely prohibited, and it should be noticed that the sale of the very worst ‡ article was allowed, provided it should be classed and owned as such when sold.

* See also a placard dated March 17th, 1593, *Gr. Placactboek*, vol. i. pp. 726-29, where the date is likewise fixed at "St. John's Day in midsummer."

† "Havenen," a word actually used only in the sense of "damaging."

‡ "Yelen-, nachtschamel-, kuytsieck-, melk-sieck-, *stanck ofte want haring*." The latter words were substituted in 1584 for the original term: *sterke haring*. The one means "stinking," the other "bad" or "strong," in the sense of "strong butter." "Kuytsieck" and "melk-sieck" are the words indicating extreme ripeness of the spawn

In order to ensure the observation of these statutes, each fishing captain is enjoined as heretofore to have his private mark apposed to each barrel before letting it out of his vessel, and have this mark and his name entered in a register kept by the town magistrate. Obligatory inspection of the *fish*, if for exportation, is now for the first time added to assay of the *barrels*; the inspector's duty being to prevent herring of different qualities being packed in one fust, and to see to the quality of the salt used. It is prohibited, as formerly, to wash, clean, pack or otherwise manipulate foreign herring. The present law is ordered to be annually promulgated afresh in every fishing town, on the 1st of March, at which date most herring captains are stated to be at home; and all such alterations and fresh statutes on the subject as may be found necessary are ordered to be drawn up by the Deputies of the towns where the herring trade is exercised, and promulgated after the States' approval. The Herring Deputies or Commissioners' functions, which till now involved the police of the trade and the administration of its common financial interests, are thereby completed with what is, in fact, legislative power; for it will appear further that their draft statutes were always approved without any alterations by the proper Legislature, i.e. the States-Provincial or General, as the case might be.

It will be seen from this brief account of what may perhaps, though improperly, be styled "the herring-fishery code of 1580-82," that its chief object was to uphold the reputation which herring of Dutch brand then already enjoyed in all foreign markets; its next, to keep the staple

and milt; "nachtschamel" I take to stand for "overnight" or herring not cured immediately after the catch.

market of the article in the country, and have it exported from the Dutch emporiums only.

The first-named and chief pre-occupation of the successive Dutch governments had indeed been apparent, besides laws, from several facts on record previous to the Republic's establishment. In 1552 it was reported that citizens of Antwerp had presumed to tamper with the town brand of Dordrecht, erasing it from certain herring-barrels and substituting another mark for it, "notwithstanding the brand of Dordt is older and more authentic, and known all over Germany, France and other countries." Dordrecht laid the matter before the States of Holland, who thought it of sufficient importance to send their Advocate (whose functions had some analogy with those of a Secretary of State) to Brussels on purpose to obtain redress.* In the next years regular lawsuits were carried on against the authorities of Malines, Ghent, Flushing and Nieuwpoort respectively, for having repacked herring from Holland in other barrels,† thereby enhancing their Zealand and Flemish marks or brands with the excellence of the Hollands produce, and perhaps using the empty barrels marked with the Hollands brand to pass off foreign fish of inferior quality. Again, in 1582, the States of Holland intervened in a lawsuit then pending between certain citizens of Spire and Worms, in the heart of Germany, about the quality of herrings bought and sold between them, merely because the herring in question bore a Dutch brand.‡

The importance of the salt-herring fishery and trade

* *Res. Holl.* 1552, pp. 482-3.

† *Res. Holl.* 1554, p. 584; 1555, p. 697; 1561, pp. 480, 517; 1565, p. 33.

‡ *Res. Holland* 1582, pp. 241, 248.

about this period is testified to by many more credentials. In 1581, the States thought it worth their while to despatch an embassy to Bremen,* in order to obtain the removal of certain edicts there issued, prejudicial to the Dutch herring trade's interest ; and let it be remembered that the Provinces were at this very time occupied by so very momentous a plan as the abjuration of their Sovereign the King of Spain, and their constitution as a free republic in the face of the world. It is likewise a fact not to be overlooked that at this most critical juncture of their history, while weighed down on all sides by cares innumerable of war, finance, and politics, the Province of Holland never once let her herring-fishermen lack convoy, when imminent danger from the enemy at sea did not force them to prohibit the fishery altogether.

The fishers fully responded to their government's care and energy ; for though many of their busses were taken year by year, either by the enemy's cruisers or by Dunkirk privateers, they never lost heart, but still continued the trade, under protection generally insufficient, and in the face of the enormous financial liabilities laid upon them by their disasters, and borne by them in common, under their self-appointed commissioners' administration. The name of Grand Fishery,† which in 1580 and afterwards was generally applied to the cured-herring concern to indicate its being "the chief industry of the country and principal gold-mine to its inhabitants," is indeed justified at the period now spoken of, by the splendid pluck and untiring tenacity displayed by the men who exercised it, under circumstances which reduced to insignificance many industries less directly exposed to the war's calamities than theirs.

* *Res. Holland* 1581, pp. 579, 732, 766 ; 1582, pp. 240-1.

† "*Groote Visscherye.*"

The war, indeed, took manifold effect upon the herring-fishery. Besides losses at sea and taxes ashore, the trade had to bear the consequences of a prohibition to export victuals, fish included, which was one of the most unpopular measures adopted by the Earl of Leicester during his short-lived and infelicitous administration of the United Provinces. The interdiction was indeed, at the Herring Commissioners' request, repealed in 1586 as regarded exportation to neutral States ;* and traders managed to get their produce carried to Germany by a circuit, the Rhine being closed by the town of Nijmegen having embraced the enemy's cause,† and refusing to let any merchandise pass out of the revolted provinces, even upon the States' urgent request. Still the prohibition was maintained as against exportation to the enemy's dominions, and sometimes enforced by the exporters being obliged, upon their ships' return, to show an attest mentioning the place where the herrings had been sold.‡ It is a curious example of the political status of the day, that an Englishman sent to govern the Republic should have enforced a measure which closed the important markets of Belgium against the herring traders of the country, while the States were at the same time making considerable money sacrifices in the latter's behalf.

Among these sacrifices it is now time to mention the immunity of excise duty on salt used in curing herrings at sea, which was conceded to the Grand Fishery as a special boon by the Prince of Orange, and ratified by the States-General soon afterwards. This privilege is first mentioned

* *Res. Holl.* 1586, p. 308.

† *Ibid.* 1585, p. 245 ; 1584, p. 538.

‡ *Ibid.* 1585, p. 808.

in 1586;* it has been maintained ever since and exists to the present day, as will be seen in another part of this work. It was extended to the whole of the Republic as emanating from the central legislative power; but the province of Holland very soon bought the privilege off, for their province, by an agreement with the College of the Grand Fishery, in virtue of which the fishermen paid the excise duty, and a consideration of fl. 6000 a-year was granted to the College out of the provincial treasury.†

The duty in Holland then amounted to fl. 14 per hundred-weight of fine white salt; whence the quantity of salt annually used by the sea-fisheries of the province would appear to have been something less than 43,000 pounds. It would not, however, be safe to attach much importance to this average calculation; for compared to the far superior quantities of salt now used free of excise by the Dutch sea-fisheries, it does not correspond to the probable extent of the trade in the province of Holland at the period now spoken of. Many considerations, which it would be highly interesting to trace at leisure, may have led the Fishery College to sell their immunity for an inequivalent sum.

Besides the Spanish fleets, the great bane of the Dutch sea-fisheries at this time were the privateers from Dunkirk, who may be said throughout the Republic's history to have been to herring fishers what the dog-fish is to the herring. Constant complaints were made of busses taken and destroyed by these audacious filibusters, against whose superior strength and seamanship such convoy as the States could

* *Res. States-General* 1586, June 12th and November 4th, 1587 September 4th.

† *Res. Holl.* 1588, pp. 133, 231; 1589, p. 459; 1593, p. 407; 1595, p. 69, &c.

afford was insufficient. The plan of self-help, which had been pressed upon the fisheries by Charles the Fifth's lieutenants, was now once more adopted ; and by a States of Holland placard, dated May 14th, 1596,* busses were forbidden to sail unless either under convoy or "in admiralship" i.e., in squadron of twenty at the least. In the latter case each of the vessels was to carry a certain quantity of artillery and ammunition, and the whole squadron to be commanded by an "Admiral" appointed by the captains out of their number. This expedient was especially recommended by the promise of a gratification to the fishing commander who should capture or sink a vessel of the enemy's. It does not appear that the premium was much contended for, as the paying of ransom, or safeguard-money, was at the time resorted to by numerous fishermen,† until the passports delivered were denounced by the enemy in 1599.‡ A special committee of ship-owners and Government officials had meanwhile been appointed§ to draw a plan for the fisheries' perpetual preservation ; but there is no result of their deliberations on record, and in the end, as the prevailing financial distress made it impossible to provide sufficient convoy by Government men-of-war, the States granted an extraordinary subsidy of fl. 20,000 to the fisheries' commissioners in 1600,|| out of which they were to find their own convoy. The grant was repeated for a long series of years, when fishermen accordingly sailed under cover of convoyers equipped at their own expense. These vessels, afterwards called "Direction-ships," (*Directie-*

* *Groot Plac. Boek*, i. 711.

† *Res. Holland* 1598, pp. 135, 193.

‡ *Ibid.* 1599, pp. 27, 623.

§ *Ibid.* 1598, pp. 128, 193.

|| *Ibid.* 1600, p. 71.

schepen)* to signify their nature as belonging to the Fisheries' directors, were nevertheless commanded by officers appointed by the Stadtholder and under oath of fidelity to the States-General. A pusillanimous plan for pacifying the Dunkirk Vikings, by issuing letters of safe-conduct under the States' seal to such enemies as should reciprocally let the United Provinces' vessels fish unmolested, "in the hope," as the States of Holland candidly aver, "that fewer pirates will this year put to sea from the ports of Flanders," † was indeed tried a few years afterwards, but there is no evidence of its having had anything like success. And this, indeed, seems highly improbable; for there was not much promise in an attempt to make the Dunkirkers give up piracy by offering them a permission to fish within range of the guns of the States' men-of-war.

The fishery laws were in the meantime strenuously maintained, although under considerable difficulties. It was not easy to enforce the prohibitions against carrying herring caught by Dutch fishermen directly abroad; and moreover, the inevitable "gain-seeking" people, who "for their singular profit" did not fear to break the law, managed to smuggle herring not lawfully packed and branded through the United Provinces, and elude the authorities' vigilance. Notwithstanding the yearly reminder to the herring-skippers, the placards, in a word, got out of observation "by the slowness and the passing of years," and were frequently re-enacted in the first years of the seventeenth century.‡

* Cf. *de Jonge, Geschiedenis van het Nederl. Zeewezen*, i. pp. 257-8. This institution is also mentioned in Meynert Semeyns' "*Beschryvinge over de Haring visscherye in Hollandt*," but with the lack of precision usual in that otherwise precious contemporary author.

† *Res. Holland* 1606, p. 783.

‡ Viz., the years 1604, 1606, 1607, 1612, 1615, 1620, 1621, 1632, *Groot Plac. Boek*, i. p. 733, and following.

They were, besides, altered in some points, among which some importance may be attributed to the shifting of the salt-herring fisheries closing-day to January ult., the express prohibition against curing salt-herring ashore, the prohibition to cure herring with other salt than Spanish or Portuguese, and the institution of divers brands, each to be solely exported to certain towns or countries. The leading idea of these several enactments is an extreme anxiety, not only to have the foreign markets constantly supplied with a good article, but also to have that article packed and otherwise made up in the fashion customary in the several markets. For instance, a "Rouen brand" was consecrated to exportation to France, and there was also a "Cologne brand." The principle of having distinct brands for herring caught at different parts of the season, which we have seen established in 1519 by the prescription of a "St. James's brand," was much extended in the early years of the seventeenth century, when a "Lady Day" (*Vrouwe brand*), an "Elevation Day" (*Kruis brand*), and a Bartholomew brand were, if not first used, at least first mentioned in the herring laws.* Each of these brands was to have the peculiar look customary in the several markets; and to this effect very detailed prescriptions were given as to the number of hoops to be applied to the barrels marked with each brand. In short, having undertaken in many points to regulate the fisherman's business, legislation by degrees took the dealer's, broker's, and expeditioner's likewise into her own hands, and the merchant's activity and acuteness were superseded by Government rules. Constant changes in the different markets' requirements of course led to fre-

* Brands stating the time of capture were then the only distinctives. The quality-brands stating herring to be "full," "matties," or "ylen," are of much posterior invention.

quent alterations of these enactments, and the branding and packing legislation of the period now spoken of is, as a consequence, rather intricate.

But of the several ampliations to the herring fishing laws in the first quarter of the seventeenth century, those relative to the practice of "sale-hunting" are the most important. This peculiar trade has originated in the Dutch fisheries' particular situation. Being obliged to fish far from their own shores, the busses would have lost much precious time if they had been obliged to sail home as soon as their cargo was completed, and land their fish before catching more. They would, moreover, in most cases have lost the advantage of landing herring very early in the season, and being first in the market, which was, and is, of great importance, as freshly salted or "new" herring has always been very much appreciated, and paid for at several times the price of fish caught or sold later in the year.* To secure the

* In fact, a frantic eagerness to be first in the market has always been an interesting characteristic of the Dutch herring trade in the early season ; so much so, that it may be doubted whether the very real advantage of selling the first barrels in any given market was often worth the outlay of money and trouble made to secure it. Throughout the Republic's time, slow coaches and slower canal boats were the only conveyances ; the Dutch never were great horsemen, and journeys on foot were not disdained even by those endowed with worldly goods. But on the day when the first "ventjagers" arrived at Rotterdam, or Vlaardingen, no speed was deemed sufficient to carry the first barrels of "new" herring to the inland towns. Dealers kept light curricles and fleet horses on purpose, and the minute a few barrels were unshipped and assayed, a furious race to the Hague, Amsterdam, &c., began. Each of the vehicles could carry a few barrels only, and the profit of the thing perhaps did not generally cover the expense. But to be first in the market anywhere was always a point of honour with the Dutch herring-dealer ; and the day when the first herring arrived, and the barrels were posted across country in chaises, with foaming teams and streaming flags, was a day of general

advantage of the early market, fast-sailing vessels, called "*ventjagers*" or "sale-hunters," used to accompany the herring-fleet, buy up the first herring caught and cured, and carry it home with the utmost speed, leaving the busses to fish on at leisure. This trade, if not attended to, might of course have afforded ample facilities to elude the prohibition against selling herring elsewhere than in the Dutch emporiums, and "sale-hunting" was therefore, soon after the fishing laws before quoted came into vigour, an object of the legislator's peculiar supervision and solicitude.

From the fact that no particular legislation on the subject existed before, it appears that the custom of sale-hunters following the busses did not come into use before the beginning of the seventeenth century. "*Ventjagers*" are indeed mentioned as early as the year 1556, but from a placard of January 11th of that year * it is evident that at that time they did not go beyond the rivers' mouths; and the wording of the first law relative to sale-hunting *at sea*, (dated 1604), plainly shows the practice to have been then very recently adopted. The first enactments on the subject are chiefly calculated to prevent the laws on catching, curing, landing, and branding herring to be eluded by

rejoicing. Even to the present time, when herring brought home by the first "hunter" is prosaically sent inland by rail, some of the traditional festivities are kept up. Dealers in fish sport hunting from their house-tops; "New Herring" is cried through every city, and an old-fashioned one-horse chaise on immense wheels, decked with the national colours, may be seen to race to the King's palace at the Hague, in order to supply the royal table with the very first barrel of herring. The whole of this pageantry, however, is now little more than a remembrance of the time when "New Herring" actually meant an influx of millions into the country, and a shower of gold upon thousands of its inhabitants.

* *Vierde Memoriaalboek's Hof's van Holland, van Mr. J. van Dam*, fol. 37; *Vijfde, ibid.* fol. 201.

"sale-hunters." They prescribe that every skipper who sails after the fleet for the purpose of buying up herring shall be provided with a license under the seal of, and delivered by, the "magistrate and treasurers of the fishery," i.e., the local fishery boards. Every such skipper is, before sailing, to take oath not to buy any salt-herring but from Dutch steersmen, and to have every lot he takes on board covered by a certificate from the seller, stating the latter's name and his vessel's, his domicile and the quantity of fish transferred. Sale-hunters are besides, like skippers, prohibited from carrying their ware abroad.

Sale-hunting appears at the outset to have been allowed during the whole of the season; though of course the business could only pay as long as high prices lasted. A restriction as to time was first put upon it, and a "hunting-time" (jaagtijd) established in 1632, the closing date after which it should not be lawful to transfer herring at sea, being then fixed at July 15th. The object of the enactment evidently was to prevent an overstocking of the market at a period when prices naturally declined, the first eager demand for early herring being satisfied. But the practice of "hunting" sometimes occasioned a glut at the very outset of a favourable season, or, as a placard of the time has it, "so threw the herring-market prostrate * that neither fishermen nor dealer could make a profit upon it." This evil was, in later times, prevented by the *hunting-monopoly*, i.e. the prohibition to fishermen to sail home during "hunting-time" unless with a full cargo. *This monopoly never legally existed under the Dutch Republic; it has been a creation of the present century*, or may possibly have been established as a College bye-law late in the eighteenth century; and those who in the course of the dis-

* "*Sulcks onder de voet wort geworpen.*"

cussions on Herring Law Repeal have given it in part the credit of the fishery's former greatness, argued from a statement utterly erroneous. The old Dutch herring laws, never for the hunters' benefit, restricted herring carriage by fishers; when a glut occurred *they prohibited hunting*, and such prohibitions are frequent enough.* As a fact, the industry was either permitted or prohibited, upon the College's annual advice, as the state of the market seemed to require abundant or slower supplies. Opinions were generally divided on the subject in the College; Rotterdam, Schiedam and Brielle generally moving to allow sale-hunters to sail, and Delft and Enkhuizen opposing them. Delegates from these five towns have for a long period composed the College, and the point whether three cities could overrule two was frequently contested *à propos* of the hunting question, and generally decided by the majority having their mind.

The said College about this time showed considerable activity. Besides the extensive administration of the conveying ships, and the collecting of the shipowners' contributions out of which they were equipped, they were constantly advising or petitioning the States for such legislative measures as the times seemed to give occasion for, and accordingly had their eye always upon the herring-fishery trade and market in the most extensive sense. Not content with these functions, "they of the Grand Fishery" constituted themselves as guardians of the laws enacted upon their advice. Every town where herring-ships were owned had a fishery board of its own: and Delft, Rotterdam, Amsterdam, Brielle, Schiedam, Hoorn and Enkhuizen, and

* See the placards on the subject of the years 1604, 1606, 1607, 1612, 1614, 1615, 1621, 1632, *Gr. Pl. Boek* I., pp. 731-748; *v. d. Lely. Recueil*, pp. 20, sqq.

probably more towns not particularly mentioned, were by means of these local boards constantly on the look-out for each other's trespasses, which, as soon as discovered, were reported to the central College residing at Delft, who took steps for the better enforcement of the law. Thus in 1604* it was discovered that skippers from Enkhuizen sometimes acted against the fishing laws, and the magistrates of the said city were compelled, upon the remonstrances of one of the Burgomasters of Rotterdam and of "them of the Grand Fishery" to issue an order for the observance of the existing rules by fishermen hailing from the Enkhuizen port. On the other hand, some of the fishing towns took upon themselves considerable responsibilities in the way of mitigating the laws when found too severe. On the 15th of December 1609,† the local boards of Delft, Rotterdam, Schiedam, Brielle and Enkhuizen met at the first-named town, and agreed, on their own authority, upon a "mild execution" of the statutes against selling herring at sea, provided such herring should not have been caught before the lawful season. This striking instance of open tampering with the law is strongly illustrative of the very ill-defined and swaying conditions under which public power was held in the Republic. Still more strongly does it testify to the fact that, even in the first outset of systematic fishing legislation, its flaws and nuisances were realised by those concerned, who knew their immediate interest even where the law precluded them from following it up.

The Central Fishery College's influence manifested itself afresh in 1606, by a prohibition against exporting herring-barrels, whole or half-staves, nets and cross-gear,‡ which prohibition was suggested by "those of the

* *Res. Holland*, 1604, p. 158.

† *Res. Holland*, 1609, p. 1089.

‡ *Kruyswant*.

Fishery" to the States of Holland, and by them applied for to the States-General, who at once enacted it to be a law for the whole of the Republic.* Nor was the College's vigilance against transgressions of the herring laws confined to stopping them at home. When any were detected abroad, diplomatic intervention was resorted to upon their advice, and sometimes successfully. As an instance of this, an "accord," of the nature of what would now be called a commercial treaty, was concluded between the States-General and the Senate of Hamburg on May 22nd, 1609,† by which the latter city bound itself over not to let any herring caught before St. John's be sold in its market. This treaty, about the observation of which considerable difficulties arose a century afterwards, was urged by the States, upon the College's advice, who had detected the sale of early herring at Hamburg, in dangerous concurrence with the Dutch exporters, who were bound by law not to fish before St. John's.‡

The year 1609 was a momentous one for the Dutch Grand Fishery, for more reasons than the treaty with Hamburg. It was in this year that James the First of England, by the famous "proclamation touching fishing," menaced the trade with a blow which, if not averted,

* *Res. Holland*, 1606, p. 934 ; *Gr. Placaetboek I.* p. 755.

† *Res. Holl.* 1609, p. 918. A copy of the document is inserted in *Ned. Zaarboeken*, 1752, p. 483.

‡ Treaties, or contracts of a similar nature seem to have existed between the city of Cologne and those of Rotterdam, Delft, and Schiedam, at even an earlier period, by which the former bound itself not to admit any herring unless branded under the Hollands' regulations. In 1754 the Dutch Consul at Cologne reported that herring from Zealand was admitted there against the treaties, "whereas no other herring than from Holland had been seen there since more than two hundred years."

might have prevented its further development, and the rivalry between England and the Netherlands as regards sea-fishery first came to an open outbreak. The several phases of this rivalry, down to its end in the war of 1652, are of considerable moment in the Dutch fisheries' history ; but as they belong to an order of events entirely separate from the trade's home regulations, it is preferable to treat of them in a separate chapter.

As regards home legislation, the now following years offer little or no matter of interest, and are only marked by a series of renovations of the placards before mentioned, occasionally varied by alterations of little importance. The only novelty in any way suggestive of the state of the business, besides the placards on salt-hunting already alluded to, is an Act of May 12th, 1620,* by which it is prohibited to fish for herring among the cliffs of Shetland, Ireland and Norway ; not in order to avoid collisions with the inhabitants of those countries, but merely, as appears from the entire tenor of the statute, because the herring caught in the said waters was said to be of inferior quality and unfit for curing. By this edict, besides, a very notable extension of the Herring Fishery College's functions is sanctioned for the first time, viz., their being invested with judicial power. Any person sentenced by the common magistrate for catching herring in the prohibited waters, or salting, barrelling, or selling herring so caught, is granted the right of appealing to the college, who shall examine the matter in their next session, and finally decide it by a judgment from which there shall be no further appeal. The college is thus appointed to be a court of appeal in some fishery cases, and its attributions as such were in the course of times extended to most other

* *Groot Placaetboek* I. p. 752.

contraventions against the fishery laws, besides those against the particular statute now mentioned. Nor were the judicial functions of this board confined to cases of breach of common law. According to a manuscript "Recueil of the Grand Fishery," or register of notes concerning it, kept, or owned, about 1753, by one Mr. J. v. d. Lely and preserved in the Royal Netherlands Library,* they have "from all old times" vindicated for themselves the right of disciplinary jurisdiction against all misdemeanours ("wandivoiren") committed by the officers and men serving both in busses and convoying ships. This competence was officially confirmed in their hands, and probably much extended, by a Resolution of the States of

* I have no positive clue to this v. d. Lely's social position. His title of "Mr." shows him to have been a graduate-at-law. The *Recueil* under his name frequently quotes the record-books of the Fishery College, and its author appears to have been otherwise possessed of extensive information on the fishery subject. It is by no means improbable that v. d. Lely may have been secretary to the College, a post of considerable importance in the republic's later years. At any rate, such information as his *Recueil* imparts may, if not contradicted by other evidence, be accounted conclusive. Unfortunately the *Recueil* is drawn up in a very succinct style, so as often to leave some doubt about the meaning of the words and abbreviations. It has evidently been composed as a private register to aid the memory of the author as deeply concerned in fishery matters, and has never been published. The original record-books of the Fishery College appear unfortunately to have been lost; and without them no very precise idea of that body's constitution and attributions can be formed. There is extant another "*Recueil van de Groote Visscherye*," also manuscript, owned, or written, by Mr. J. van der Craght, and now in Mr. Nyhoff's private collection. I have, upon inspection, found both manuscripts to be literally of the same tenor, and have therefore quoted the one bearing the latest date. V. d. Craght's is dated 1745. Both look like copies of some original bearing a still earlier date.

Holland dated December 20th, 1625*, which indeed constitutes the College a supreme court of justice in fishery matters, with very extensive attributions. All misdemeanours of the seamen and officers in the convoying vessels, who it will be remembered were in the country's service and under oath to the States, were by this Act attributed to the College of the Fisheries' Deputies and expressly withdrawn from the ordinary military courts for naval matters, i.e., the Admiralty Boards. Proceedings against convoying commanders guilty of "shameful running away out of the sea," and "omitting all devoir against the enemy," as well as common breach of discipline cases, were at the time now treated of committed to the college's jurisdiction. Their sentences were decisive and without appeal. Like all other fishing laws, the statute in question was enacted upon the college's own presentation, or rather was enacted by them and ratified by the States of Holland.

"Devoir" was indeed required from both convoying men-of-war and fishing vessels at the time when the college was thus qualified to enforce it; for in no period of the republic's naval history did the Dunkirkers cause as much prejudice to the fishing interest. In 1625 the town of Enkhuizen alone is reported to have lost a hundred busses to them.† Naval battles *in forma* were fought between them and the herring fleet and convoyers; and numerous instances of busses being taken by ten together, and convoying ships overcome by "the enemy," are balanced by accounts of the latter having lost both ships and men.‡

* *Res. Holland*, 1625, p. 604. *Recueil v. d. Lely*, p. 8.

† *Gevers Deynoot de magno sive halecum piscatu Belgico*, p. 41.

‡ *Res. Holland*, 1627, pp. 240, 248, 252, and many others in the next years.

This irregular warfare was not carried on without considerable outlays of money. Sums averaging up to thirty thousand florins were annually granted to the Fishery College for the warlike armament of the busses; and subsidies very much larger were granted to the Admiralty Boards to provide the necessary convoying ships. In 1627 the latter subsidy was carried to one million,* to be furnished by the several provinces, each for a part proportioned to its interest in the business, and twenty-four men-of-war were sent to protect the busses in the said year. Indeed, during a series of years the main part of the States of Holland's Acts relative to the herring fishery consists of money grants to the College and the Admiralties, and exhortations to the latter boards to be prompt in equipping the necessary vessels. The difficulties with England about the herring fishery in the North Sea, and the insecurity arising from the British Sovereign's manifestly hostile intention to Dutchmen fishing on his shores, of course made matters still worse for the trade. It is indeed a marvel that it should, in spite of so many difficulties, have attained a high degree of development. Yet such was the case, as appears from Meynert Semeys's curious little book already quoted, and which, written in 1639,† gives a very high idea of the state of the business at the time, even if due allowance is made for a tendency to exaggeration natural in the author as a citizen of Enkhuizen, then one of the most important among the herring-fishing towns.

With Semeys it is a point beyond dispute that Providence has specially destined the Netherlands to be the centre of the world's herring fishery. "The Dutch," he

* *Res. Holland*, pp. 164, 166, 247.

† Meynert Semeys, *Corte beschryvinge over de Haring visscherye in Hollandt*.

says, "catch more herrings, and prepare them better, than any other nation ever will ; and the Lord has, through the instrument of the herring, made Holland an exchange and staple-market for the whole of Europe. The herring keeps Dutch trade going, and Dutch trade sets the world's afloat," whence the author states Dutch herrings to be the mainspring of the world's trade and traffic. No other nation, he says, ever tried this industry but to their detriment ; and as an instance of this, he relates the fact that herring caught by Englishmen at the same time and place with Dutch fishermen had been found bad and corrupt at the market of "Danswyck" (Dantzic?), while the Dutch produce was eagerly bought there. Besides such general statements, which at any rate are additional proof that herring was at the time a considerable article of exportation, the author gives some valuable details about the way in which the fishery was carried on in his days. The first cast of the nets is made at St. John's (June 24th) about the Shetlands, Fairhill and Buchan-Ness,* and the fishing continued in those waters till St. James', or the 25th of July. From St. James' to Elevation Day (September 14th) Buchan-Ness or "Sevenjot"† was still the herring-fishers place of resort ; while in the autumn they sought more southerly seas, and fished in the so-called "deep water" off Yarmouth till St. Catherine's Day (September 25th). But these were general rules ; precise sailing orders to the fleet were yearly agreed upon by the college of the herring

* "Hitland, Phayril, ende Boekenens." The name of the latter locality seems to correspond with that of Buchan-Ness.

† As to the place designated by "Sevenjot," I do not wish to hazard a guess. Luzac (*Holl. Rijkdom II.*, p. 261) spells "Jeveniot," and the name is given as "Sevenaths" in the periodical called *Nederlandsche Hermes* for Dec. 1826, p. 14.

fishery at their annual meeting at Delft, some time before the opening of the season. This often-mentioned corporation, denominated by Semeyns, "the Lords of the Grand Fishery," is stated by him to be composed of two delegates from the magistrates "of such towns as are notably concerned in the business." But this is inexact; for several towns and villages owning herring-ships were more than once refused a seat in the college, whose members appear to have had a full share of the exclusive spirit common to all who held power of any kind in the Republic. The college's power over all concerned in the herring trade was very large, especially as the licenses without which no buss could sail were delivered under the Grand Fishery's seal, although by the intervention of the local fishery boards; whereby the college were possessed of the means to enforce their rules upon the ships of towns not represented. It is therefore a matter of easy comprehension that a vote in the college was strongly desired by every fishing town, whereas the towns already represented there used to resist intruders with equal perseverance. Amsterdam and Hoorn, for instance, demanded admission of their delegates to the college in 1628,* but were repelled, and not admitted even when the States had appointed a special committee to bring the rival parties to an agreement; although it appears from a very obscure entry on page 2 of v. d. Lely's '*Recueil*,' that Amsterdam would, in order to obtain a seat in the college, have consented to bear her share in the common charges, but have none in the subsidies, which were to be divided as before among the other towns. In 1636, Dordrecht in her turn sued for a seat in the college, but also met with systematic opposition. Monnikendam was likewise rejected in 1701, but

* *Res. Holland*, 1628, p. 556; 1629, pp. 665, 757.

Enkhuizen generously consented to deliver licenses to fishing captains from this town, which was thereby enabled to send herring busses to sea on its own account. Besides the fishing towns of the Maas, Enkhuizen appears for a long time to have been an influential member of the college, in which the preponderance of each town was, according to Semeyns, determined by the number of vessels hailing from it. Still, as the author avers, the greater member has no right "to introduce any novelties into the trade," and especially to permit the sailing of "sale-hunters," without the lesser's consent. It has been shown above that, if such a bye-law or tradition ever existed in the bosom of the college, it was often transgressed, and that Delft and Enkhuizen were overruled by the other three towns, as regards the admission of sale-hunters. Still, as a general rule, Semeyns' statement may be true enough; for a reluctance to admit "novelties" of any description has always been the college's prevailing disposition, much to the prejudice of the trade they were called upon to promote.

As regards the herring fishery's extension at this period, no precise statement can be made out with any degree of credit; but it certainly was very considerable. Walter Raleigh has certainly committed exaggeration by averring in his 'Observations' touching trade and commerce,* that 3000 ships and 50,000 people from Holland were yearly employed in the herring fishery upon the British coast; and other English writers of the period have given lower estimates. De la Court, in his famous essay, 'Heilzame Politique Gronden en Maximen,' evaluates the fleet at 1000 busses; but he wrote at a period when the Grand Fishery's halcyon days were avowedly over. A writer in

* Muller, *Mare clausum*, pp. 72, sqq.

"den Koopman" (vol. i. p. 235) states 1500 busses to have sailed in 1610 and 2000 in 1620, and doubtingly adds that 3000 are said to have sailed a few years later. According to Semeyns, Enkhuizen alone had 700 afloat in 1639 or thereabouts; and this certainly was not undervaluing the resources of a city whose glory and renown are the author's continuous boast. The towns on the Maas were then and afterwards ahead of Enkhuizen as regards the development of their herring shipping. Taking all together, I should be inclined to tax any one with exaggeration who values the number of Dutch salt-herring busses above 2000 at the time of the fishery's greatest expansion. Holland and Zealand are the only provinces which under the Republic owned herring-busses; and Zealand's share in them was very small. Considering that foreign trade, agriculture, and several manufacturing industries have always occupied the majority of the population of Holland, and that some eight or ten towns at most were more or less concerned in the fishery, two thousand herring ships would appear to be a maximum which can scarcely have been exceeded; and it certainly is a matter of wonder that such a number should ever have been attained. A herring buss in Semeyns' time cost fl.3150, hull and standing rigging; and the "equipment," by which name the author designs tackle, nets, salt, barrels, and crew's hire and food, in the course of a season came to fl.4380 more. Each buss commonly made three voyages between St. John's and December, at the end of which the whole inventory was used up, and nothing remained but the vessel's hull, and that generally in a very deteriorated condition. The sum annually invested in the herring-fishery during its greatest expansion must, by the above considerations, have amounted to something like fl.15,000,000,

an immense outlay indeed, considering the value of money at the time. The expenses of the trade appear to have augmented fast, notwithstanding the prohibition against exporting fishing materials. In 1669 a herring ship was estimated at fl.4550, and its equipment at fl.5500.* In 1768 the hull was calculated at fl.9000, and the equipment at fl.6000 for two voyages, and fl.8000 for three.† As for the trade's returns, each buss is stated in Semeyns' time to have brought ashore on an average forty last of herring in a season. The herring-prices at the time are not known; but such sums as 37 and 43 millions, stated to have been the fishery's annual revenue by several foreign authors,‡ are certainly strong exaggerations.

It is not certain how long this golden period of the Grand Fishery lasted. Statistics were not then in use, and, as regards the herring fishery, did not begin to be published till the trade's decay had very decidedly set in. The College, whose business it was to swear in every herring-skipper and appose their seal to the license without which none were allowed to sail, will probably have kept some record of the number who sailed in each year. But their books and accounts, if any, are no longer extant; nor do any of the authors on the subject give any chronological details as to the duration of the trade's greatest prosperity. As for legislation, some slight additions to the placards before spoken of, and many resolutions of both the States-General and those of Holland, about convoying-ships to be sent out and subsidies to be granted, compose the whole of it on record during the subsequent years; but these give no clue to the fishery's annual condition or progress.

* P. de la Court, *Heilzame Politieke Maximen*.

† *Den Koopman*, i. p. 354.

‡ *Ibid.* i. p. 235.

Such sums as fl.100,000, borrowed by the Grand Fishery College in 1647,* and fl.187,958, exhibited by the Admiralty of Rotterdam in 1641 as convoying expenses,† do indeed show that, if the requirements for the herring fishery's safety were heavy both on the hands of the State and the parties concerned, the latter were able to meet, and Government found it worth while to cover them. The first serious check to the trade's expansion appears to have been the first war between the Republic and England in 1652; and from that year downward, for more than 60 years. War, Convoy and Prohibition are the words in which the Grand Fishery's history might not improperly be resumed. The Dutch fisherman's most redoubted foes under the Republic were the English man-of-war and the French privateer; and during the greater part of the period between 1652 and 1713 the Republic was at war either with England or France, or both.

Some time before the war of 1652, complaints of Dutch fishing vessels being taken or plundered by English were frequent, and peculiar activity in the equipment of convoying ships was accordingly recommended by the States to the Admiralty boards. Tromp's encounter with Blake off Dover, in May, 1652, having determined the formal opening of hostilities, the herring-fleet were the first sufferers, and a considerable number of busses, together with eleven convoyers, were taken by Blake in July. The States of Holland at first seriously considered the advisability of calling home the rest of the fleet, and stopping the fishery till better times; but the measure was ultimately rejected, and twenty-four fishing vessels were armed as convoying ships

* *Res. Holland*, 1647, p. 164.

† *Ibid.* 1641, p. 146.

instead, besides six regular men-of-war.* Some English herring-boats having been taken by the Dutch, Holland at first tried to move the States-General to release them, and issue further orders for respecting the British fishermen, in the hope of meeting with similar forbearance on the enemy's hands. But as the English on the contrary made a thorough use of the rights of war, orders to do their fishermen the utmost possible damage were issued, and several more of their boats were accordingly taken in 1652 by Dutch armed fishing vessels.† But the grand tournament of naval skill and daring, of which the North Sea was the theatre during the war of 1652-4, left no room for much casting of nets. Though in the year 1653 the Herring College applied for protection with even more than usual persistency, the States, then obliged to strain their utmost means towards the equipment of the squadrons which fought under Tromp, Evertsen, de Witt, and de Ruyter, could afford no men-of-war for convoy throughout the season, and were obliged to grant "commissions" to some fishing skippers, which documents, although ostensibly delivered to promote the fishery's protection, appear indeed to have been nothing short of *lettres de marque*.‡ Such covering could, of course, be of no avail against the British fleets, and it is accordingly averred that in 1653, the herring fleet, then still consisting of some two thousand vessels, was kept at home,§ not indeed by Government order such as was in the said year issued to the whaling fleet, but by the ship-owners' prudence, who saw the impossibility of fishing in anything like safety.

* *Res. Holland*, 1652, pp. 343, 387.

† *Res. Holl.* pp. 364, sqq. *Holl. Mercurius*, 1652, p. 86.

‡ *Res. Holl.* 1653, pp. 462, 538.

§ Aitzema, *Zaken v. Staat en Oorlog*, v. iii. p. 810.

The Treaty of Westminster, in April 1654, put a term to the misery inflicted upon the United Provinces by this disastrous war; and in the same year the fishing was recommenced, but still under difficulties, as appears from several complaints of violence, suffered from English men-of-war in the next years.* A general renovation, in 1656, by the States of Holland of the placards of 1582 on the Grand Fishery is the principal event on record during the short interval of comparative quiet which succeeded the Peace of Westminster. Nearly the whole of this placard of 1656† is a literal reproduction of the existing laws; but a few additions, now enacted for the first time, point out in some degree the fishery's already altered condition. The fact of convoying ships equipped by the Herring College being always with the fleet is now, for the first time, officially apparent from a clause which enjoins the "captains of the Grand Fishery" (i.e. the commanders of the above-mentioned direction-ships) to arrest any fishing skipper guilty of either selling herring to foreigners or attempting to carry it directly abroad, and send him home to be tried. Besides this precaution against trespassers, a general aggravation of the penalties, consecrated by the placard of 1656, may be considered as an indication of the pressure exercised by the law upon the trade at large, and the consequent frequency of infraction. A custom of selling herrings unassayed and unbranded, or, as termed in the new placard, "as it lies, or upon trial" ‡ is made the object

* *Res. Holland*, 1656, p. 990 and others.

† *Groot Placaetboek*, vol. viii. p. 1242.

‡ "Aen 't hoepje te tasten, of zoo die leyd." The former words are obscure, and may perhaps be relative to some peculiar mode of sale of unassayed herrings, viz., by touching the hoops of the barrel as a sign of agreement followed by immediate transfer. But as "tasten" in the Dutch of the period was, I believe, sometimes used for "to

of a special prohibition, no other sale than "*op Pak en Keur*" (i.e. after the prescribed packing and assay, and upon the quality determined by the brand) being permitted. Another clause, prohibiting to pack salt, spices, or other goods in herring barrels under cover of the brand, is indicative of fraudulent habits among fishermen and herring dealers; and this supposition derives additional strength from the official fixation, as appendices to the law of 1656, of a series of very detailed forms of the several oaths to be taken by herring skippers and sale-hunters both on sailing and returning, which oaths provide for every variety of infraction of the law which a person of either description might have committed or might be tempted to commit. Even these stringent measures did not prevent frequent breaches of the law, which, as soon as May 1658, determined a special re-enactment of the prohibition to sell herring caught before St. John's.* Another renovation of the clauses against selling herrings at sea was thought necessary in 1663.† It is more than probable, from such indications as these, that the wrong effects of several of the laws in vigour, and the prejudice they did to the trade, had by this time been realised by most of those immediately concerned. A very far-sighted and able writer, P. de la Court, has delivered an opinion to the same effect in his "*Heilzame Politique Gronden en Maximen*" (edit. 1669). "Several placards on the herring fishery," he says, "have been made ere now; the which

taste," it is probable that a trial of the ware by the buyer was substituted for the official brand. The custom is already referred to in a resolution of the States of Holland of the year 1651 (*Res. Holland*, p. 255).

* *Res. Holl.* 1658, p. 178. *Groot Placaetboek* ii. 2501.

† *Ibid.* 1663, p. 172; 1664, p. 110. *Groot Plb.* ii. 2898.

tend greatly to the advantage of the foreign Fishermen, who are not constrained to obey them."

Being unable efficiently to enforce their self-made rules at sea, the Herring College resorted to the greater stringency in the execution of such part of them as lay within the control of their officers ashore; and the towns whose delegates were excluded from the college were of course the first sufferers by this severity. The laws were not only executed with great severity, but actually overstepped by the college. Thus, in 1659, Hoorn, which it will be remembered had no seat in the college, complained of her ship's masters being obliged, before sailing, to get a licence (*acte van consent*) from the Grand Fishery, which document was only delivered upon the applicant taking oath not to fish before July 8th.* This date was posterior by a fortnight to the lawful opening of the fishing season, and it is not clear in virtue of what alleged competency of their own the college established a "*keure*" or bye-law derogating from the law of the realm in so vital a point. The author of Van der Lely's Register, who certainly wrote at a much later period, does not appear to have been precisely informed about the matter, and simply states that, "in 1659," the opening date was at one time delayed till some day in July,† without adding whence the college derived a title to such delay. At any rate, Hoorn, being excluded from the college, alleged the proceeding to be unlawful as applied to her own busses, and laid the matter before the States of Holland. A conference was called between delegates from the college on one hand and Hoorn on the other; and as a conse-

* *Res. Holland*, 1659, p. 199.

† "In 1659, wierd het eens vers (choven) tot in July, maar't Jaar daaraan hersteld."—*Recueil*, p. 14.

quence the lawful date of June 24th was restored in the next year, and not thenceforward departed from.

In 1663 another difference occurred, still more strongly illustrative of the efforts made by many to escape the college's rule. One Francis Denick, a citizen of one of the herring towns on the Maas, obtained the citizenship of Veere, in Zealand, in order to avoid the statute of Holland which prescribed all herring caught by Holland fishermen to be brought to one of the markets of that province. Though now a citizen of Zealand, Denick continued to send his busses to sea from the Maas, and the college therefore persisted in applying the law of Holland to their skippers and cargoes. Upon the owner's petition the States of Zealand instructed their delegates to the States-General to remonstrate with those of Holland; and a debate on the Denick question accordingly took place in the latter's assembly, in which the Zealanders advocated their new made citizen's rights, but without any success, Holland maintaining the supremacy of the college and the validity of the provincial statutes of 1582 and 1656 over all ships sailing from any of the Holland ports, whatever province the owner might belong to. "The question made much noise, but led to no result," as Van der Lely mentions in his '*Recueil*.' *

The short period of peace with England, as said above, brought the Grand Fishery only comparative quiet and

* *Recueil v. d. Lely*, p. 14. *Res. Holl.* 1663, pp. 336, 352, 609. It will be remembered that the several Provinces were their own legislators, and that only such statutes as were promulgated by the States-General took effect in the whole of the republic. As there was no codification, and laws were often laid down in very unprecise terms, collisions between provinces on points of legislation were very frequent throughout the Republic's existence.

security. The war with Sweden (1656–60) did not directly affect the herring fishery, as hostilities were carried on in the Baltic, far from the herring seas. It appears, however, that English privateers, sailing in English vessels under Swedish commission, in the summer of 1659, took occasion from this war to annoy the Dutch herring fleet; and the Republic's ambassador was ordered to intercede with the British Government to obtain the cessation of this abuse.* Fresh complaints of violence suffered from the English occurred in October 1660, and Charles the Second's displeasure being soon after aroused by negotiations between the Republic and France, by which the States aimed at a reciprocal guarantee of free fishery all over the sea, the Dutch ambassador to the British Court was not successful in his endeavours to obtain redress of his country's fishing grievances.† The conclusion of the eventful alliance with France on April 27th, 1662, by which the fishery were promised the desired reciprocal protection, and the short-lived treaty between the States and England, of September 14 of the same year, could not long shield the Dutch herring trade against the inevitable consequences of the profound divergence between Charles the Second's political notions and de Witt's government by an aristocracy. In the course of 1664 both rival countries captured several of each other's vessels; and on January 26th, 1665, even before England had openly declared that war which already existed *de facto*, the States-General for the first time prohibited all ships from sailing from the United Provinces, whether for trade or fishery.‡ England at the time proffered passports or "*actes de sureté*" to the Dutch

* *Res. Holl.* 1659, p. 261.

† *Ibid.* 1660, p. 749; 1661, p. 181.

‡ *Groot Placaetboek.* iii. 291.

fishermen against payment of safeguard-money, but the States of Holland, "considering that this might be of very dangerous consequence, as making the inhabitants of these countries indirectly tributary to the King of England," prohibited the taking out of such passports, and on February 3rd insisted afresh on a strict observation of the prohibition to sail.* The treasurer of the Herring Fishery at Maassluis even incurred the States' severe censure for having procured British passports for the shipowners of his city; he was strictly enjoined not to make use of the documents bought and paid for, and only escaped punishment upon consideration of his having acted "more from inadvertency than malice."† Wishing, however, if possible, to divert the evils of war from their fishermen on equal and honourable terms, the States-General ordered one of their naval commanders to offer England a safeguard for her fisheries on terms of reciprocity; and a letter to that effect was accordingly sent from the Dutch flagship to the magistrate of Yarmouth.‡ No answer being received, the herring fishery remained forbidden in the years 1665 and 1666, in the course of which the prohibition was re-enacted more than once, and prohibitions against importing foreign herring and salt-fish were enacted to prevent the enemy's profiting by the stand-still of the trade in Holland.§ A proposition to

* *Res. Holl.* 1665, pp. 59, 78.

† *Ibid.* p. 78. It will be remembered that every town where herring busses were owned, even though not represented in the College, at this time and afterwards had a local fishery board of its own, and a "*Penningmeester*," or treasurer, appointed to manage the local fishing interests. The Treasurers of Enkhuizen, Rotterdam, Schiedam, Brielle, and Delft, were usually the delegates of those towns to the College.

‡ *Hollandsche Mercurius*, 1665, p. 143.

§ *Groot Plac. Boek.* iii. 293, 295. *Res. Holl.*, 1666, pp. 101, 310.

re-open the fisheries was not made in the States of Holland, till July 1st, 1667, some days after de Ruyter's splendid success up the Thames; and when peace had been concluded at Breda on July ult., and the herring fleet could sail in safety, the best part of the herring season, being the third during the war, was over and lost.

There is no evidence to show on what scale and with what success herring fishery was exercised in the years 1667-1672. But even admitting these years to have been favourable, the trade can scarcely have had time to repair the immense losses undergone during the foregoing war, from ships taken or kept inactive during the sailing prohibition, and able sailors turned out of the business and killed in the country's service. The only indication of the altered state of the business is a debate which occurred in the States of Holland * in March, 1669, on the expediency of re-enacting the penalties against selling fishing-vessels and gear to foreigners, and taking service on foreign herring vessels; which debate, however, does not appear to have led to any definite result. The formidable war of 1672, which eventually brought the Republic to the verge of destruction, occasioned a fresh prohibition from sailing on mercantile or fishing expeditions; which again preceded the war's actual outbreak by some days, being first proclaimed on March 19th, 1672. It was indeed repealed on September 15th of the same year, but re-enacted in the next, towards the opening of the fishing season; and it lasted even after peace had been concluded with England in February, 1674, as the continuation of war with France still left little chance of fishing in safety. Mutual grants of free fishing were indeed conceded by France and the States on September 15th, 1675, and June 22nd, 1677, but on both occasions repealed soon after-

* *Res. Holl.* 1669, pp. 63, 102.

wards ;* and the liberties taken by French and Zealand privateers with the reciprocal enemies' fishing vessels for some time proved an impediment to the protracted negotiations carried on at Nijmegen for the conclusion of peace with France. Warfare between fishermen and Dunkirk privateers lasted till late in 1678, and not till the conclusion of the peace of Nijmegen, in August of the said year, could the herring fishery be recommenced in safety. For six consecutive seasons the trade had been either interdicted or virtually impossible except on a small scale. No indications have unfortunately been preserved as to the extent to which it was carried on in 1678 and the next years, but even without precise knowledge of the facts there can be no doubt that a twenty-five years' period of nearly constant naval warfare must have occasioned a lasting decline. The very considerable amount of capital which, as shown above, was invested in the trade before 1652, cannot but have been partly withdrawn from it in consequence of the long and repeated periods of entire inactivity brought over the fishery by the several wars.

It is apparent from many circumstances on record that the trade's inward organization has suffered considerably from the consequences of the war. Although sustained by annual subsidies, generally to the amount of fl.30,000, and in some years more, besides the annual consideration of fl.6,000 paid to the Grand Fishery as redemption-money for the exemption from duties on salt, the treasury of the Grand Fishery College was in constant distress from 1670 downwards, and their administration appears to have been often in a disordered condition.

* *Groot Plac. Boek.* iii. 292, 298, 305 ; *Holl. Mercurius*, 1677, p. 230 sqq. ; *Resol. St. Gen.* Sept. 2, 1675, June 3rd and 22, 1677 ; *Res. Holl.* 1677, p. 381.

From a very succinct list of the college's annual balances, to be found on p. 45 of v. d. Lely's 'Recueil,' it is evident that yearly arrears, ranging from fl.21,000 to fl.30,000, occurred between 1670 and 1679, and that in 1672-75 and 1677-78, no proper accounts have been kept. The quality of the fisheries' produce appears at the same time to have been in decline, as a proof that even by the most vigorous control and detailed legislation it is impossible to warrant the excellence of any article against the effect of the dealer's cupidity. In July, 1683, Dantzic merchants complained that the Dutch brand-herring brought to staple in their market was frequently either found unsaleable or sent back to the seller from the inland German towns in consequence of the fish being bad, the barrels half filled with salt, &c. Complaints of a similar nature were sent to Dutch herring dealers by their correspondents at Stettin; and the States of Holland, besides admonishing the college to better enforce the statutes, resolved to write to the magistrates of the said German towns and beg them, in case of any further complaints, to note the marks on the barrels returned, and communicate them to the States, in order to facilitate the detection and punishment of the culprit fishing steersman, cooper, or brander.* Again, in November, 1687, complaints on the quality of herring exported to Sweden were laid before the States by the Dutch Ambassador at Stockholm, who represented that, if such dealings continued, Dutch herring was in danger of losing the Swedish markets to the Scotch produce.†

A short return of relative prosperity appears to have dawned upon the herring fishery after the peace of Nijmegen. At least, no other statistics being extant, such

* *Res. Holl.* 1683, pp. 256, 260, 309.

† *Ibid.* 25 Nov. 1687.

a conclusion may be drawn from v. d. Lely's 'Recueil,' in which (p. 45) it is recorded that from 1679 to 1689 the deficits on the Herring College's accounts were replaced by surpluses. The subsidies granted to them by the States in these years uniformly amounted to 30,000 florins ; and as their income besides these subsidies was mainly derived from last-money, the revenue from which was proportioned to the quantities of herring caught, the condition of the College's treasury must in some measure have reflected the trade's prosperity and adversity. Deficits on the books accordingly recommenced in 1690, a short time after the beginning of the war against France. This war was indeed chiefly carried on ashore and in the Mediterranean ; but for Dutch fishermen war against France meant destruction by Dunkirk privateers. To keep these at bay was accordingly one of the principal aims of the English and Dutch fleets in the course of the war ; but the impossibility of sheltering the fisheries from them was once more proved, though liberal grants of convoying ships were made to the Fishery College by the States of Holland. These, as of old, proved insufficient against the omnipresent Dunkirkers, and a prohibition to sail was therefore once more resorted to in 1691. Having been promulgated in the first days of the year, the prohibition was indeed withdrawn, at the College's request, on June 23rd, being the day before the opening of the herring season ;* but on November 6th, before the season's end, the fishery was again prohibited and only permitted in the next years on condition of the busses' steersmen delivering one-fifth of their crews to the Admiralty Boards under which they resorted, to be employed on the Republic's squadrons. Holland at the same time interdicted the ransoming of busses captured by

* *Res. Holl.* 1691, p. 347. *Gr. Plac. Boek.* iv. 235, 237.

the Dunkirkers,* in order, if possible, to discourage them by withholding the price of their exploits ; and it may be assumed that in these circumstances the Grand Fishery fared very miserably even during the short periods of the war when it was not subject to an actual prohibition. A declaration proclaiming the mutual freedom of the fisheries was agreed upon between the Dutch and French delegates towards the close of the negotiations which in September, 1697, led to the peace of Rijswijk ; but the results of a six years' war, in the course of which neither the efforts of the allied English and Dutch fleets, nor Jean Bart's taking regular service under the French colours, could quell the Dunkirkers' audacious invasions, told heavily upon the herring fishery at the end of the seventeenth century. The "extraordinary" subsidy of 30,000 florins, which during the war had been withdrawn and replaced by Government convoy, was granted again on November 5th, 1701, upon the Grand Fishery's representation to the States of Holland, to the effect that they had got deeply indebted during the war, in consequence of many busses and several of the College's own convoyers having been taken by the enemy.†

Nor was the end of their trials then at hand. The war for the Spanish succession again brought the Republic and France into the field as foes in 1702 ; and even before war was declared by the States (May 8th) they once more, on March 30th, laid an interdiction on all sea fishery.‡ Now, as in 1691, the interdiction was withdrawn on June 23rd, the day before the opening of the herring season ; and this time the Grand Fishery was, in consideration of its supreme importance for the country's most vital interest, exempted

* *Res. Holl.* June 22, Aug. 22, '25.

† *Groot Placaetboek*, v. p. 1562.

‡ *Ibid.* v. p. 376.

from the obligation to send one-fifth of the crews to serve under the Republic's colours,* to which all other branches of fishery were indiscriminately subjected. In the course of the war, frequent deliberations on convoy by men-of-war to be granted to the fisheries, at their urgent and repeated request, again form the main part of the States' records concerning them. An idea of the convoyers' efficiency may be formed from an account of an engagement between four of them and four heavy French men-of-war, in which, on June 26th, 1703, the Dutch convoyers were either sunk or taken, and part of the herring fleet burnt by the French in the Shetland seas.† A fresh renovation in 1707 of the existing laws against exporting herring barrels or nets,‡ and a "warning," proclaimed in August, 1708, against herring fishers taking passports from the enemy "whereby the foe is much strengthened and our other subjects are exposed to serious prejudice,"§ are further sinister testimonies to the Grand Fishery's sufferings by this war, which were only terminated by the peace of Utrecht in April, 1713.

An era of peace now dawned upon the Republic. But her herring fishery was broken down by the series of wars and disasters, of which the last pages contain a very rapid account. It is in the nature of sea fishery as a trade to require an uninterrupted rotation of capital; for, besides the stock sunk in ships being subject to deterioration, the considerable floating capital annually expended in equipment cannot of course lie idle, and must be withdrawn from the trade if an interruption of any length occurs. To keep a fishing vessel idle for a season is to incur a clear loss;

* *Groot Placaetboek*, v. p. 377.

† *Europische Mercurius*, 1703, ii. p. 107.

‡ *Groot Placaetboek*, v. 1566.

§ *Ibid.* v. 1573.

and the only way in which to avoid this loss is, if possible, to sell her, and buy a new ship when better times are come. Wherefore, a fishery which during sixty years was scarcely ever exercised without danger, which was several times prohibited for years together, and from which it was constantly forbidden to sell out, may by a safe deduction be assumed to have been brought down to a low level at the end of such a period, not to speak of losses of ships to the enemy. I have not found any statistics or positive records as to the Grand Fishery's condition immediately after the peace of Utrecht ; but it may be safely assumed to have at the time presented but a shadow of its former greatness. And now the full weight of the legislative restrictions imposed upon it contributed to keep it down. Being intricated in a net of regulations intended to warrant the quality of its produce, it could not compete with foreigners, who managed under a more liberal system to produce an article equally marketable, if not equally good. Being tied to one first-hand staple market, viz. the Dutch emporiums, it could not regain in the foreign markets that privileged position which it had of course lost during the years of its actual stoppage and stand-still. The fishing laws have perhaps contributed to the herring trade's greatness, but they have certainly prevented it from rising when prostrated by the force of events. As a very convincing proof of this the herring negotiations with Hamburg may be cited, which are the principal centre of the present narrative's interest, in the period to which it has now advanced.

It will be remembered that a treaty had been concluded in 1609 between the Republic and Hamburg, in virtue of which either party was to exclude herring of whatever origin from its markets if not certified to have been caught after St. John's, or June 24th, and cured on board.

Holland had obtained this agreement as a shelter against competition by Scotch fishermen, whose laws left them at liberty to fish at an earlier date, and whose coasts lay so near the herring seas as to enable them to cure their fish ashore. As "new" or first herring was sometimes paid tenfold prices, it was of great consequence to be first in the market ; and this privilege Holland hoped to secure by binding Hamburg over to apply the Dutch law to foreign herring.

In the course of the seventeenth century, however, Hamburg's execution of the treaty seems to have been such as from time to time to occasion recrimination on the Dutch side. In 1668, a plan formed by some citizens of Hamburg to fish for herring very early in the season and pack the fish in Dutch barrels was detected by the Fishery College and protested against by the States of Holland.* In the first years of the eighteenth century, the British herring fisheries having meanwhile acquired considerable development, Hamburg was eagerly sought as a market for Scotch herring. Hamburg dealers were, on their side, peculiarly anxious to have their market stocked early, and often complained of having to put off their expeditions to the inland of Germany, till herring caught on or after the 24th of June and cured at sea could be brought to their market.† There were two ways of gratifying this eagerness for early herring : firstly, to fish before June 24th, and secondly, to sail to Hamburg straight from the fishery. Dutch fishermen were of course precluded from the former method, and as their law forbade them to carry their herring elsewhere than to their own ports to be assayed and branded, they were likewise obliged to refrain from the latter, and thereby placed at a very great disadvantage.

* *Res. Holl.* 1668, p. 173.

† *Ibid.* 1715, p. 724.

Matters became still worse for them when Hamburg began to take liberties with the treaty of 1609, and admit Scotch herring without the certificate required by the treaty with the Republic, which infraction seems to have been pretty habitual in the first years of the eighteenth century. The British Ambassador at Hamburg appears to have employed himself in favour of these imports, and the Senate for some time closed their eyes on them, whereby Holland was in danger of losing the considerable advantage inherent to having no early rivals in the Hamburg herring market.

The Republic's Ambassador at Hamburg in 1715 detected what was going on. He straightway reported matters to the States-General, and upon their instructions insisted with the Hamburg Government upon the strict observation of the treaty of 1609. England, he urged, in virtue of her treaties with Hamburg, was not entitled to any more favourable treatment than the Republic, or to have her herring admitted under conditions refused to Dutch and other herring upon the terms of the treaty. This was true enough, and indeed made out a strong case for the Republic ; but she spoilt it by adding another argument based upon her adversary's interest as interpreted by herself. The States instructed their diplomatic agent to represent that the Dutch regulations imposed by treaty upon the Hamburg market had been observed there for a century, and found beneficial for that market as well as for the trade in Holland. Being averse to let Dutchmen manage their own interests in the herring concern, the States could not see that Hamburgers were perhaps the best judges of theirs. After some exchange of memorials, Hamburg on October 25th, 1715, pledged herself henceforward strictly to observe the treaty. But even admitting this pledge to have been quite sincere, it was impossible to fulfil it against the

combined interests of Hamburg dealers and English fishermen, the latter backed more or less openly by their Government's ambassador ; and, in consequence, complaints about Scotch herring being admitted without a certificate were heard in 1716 even louder than in the preceding year.

Here, now, was a tangible indication of the Dutch regulation system's wrongs and of the danger of maintaining it. Evidence had already been, and about this time was still further obtained to the system's inadequacy always and everywhere to warrant the excellence of the Dutch brand-herring, and it was now clearly shown that, so far from shielding the Dutch fisheries against foreign competition, it left them at the competitor's mercy by preventing them from using the only expedient by which concurrency could be upheld, viz. doing as the foreigners did. It is a remarkable instance of the force of habit and long conviction, that no one among the Republic's legislators seems in 1715 and following years to have realized this most evident truth. They were imbued with the notion so strongly expressed by Semeyns of old, viz. that Providence intended Holland to supply the world with herring ; and in virtue of this notion they did their utmost to enforce the supremacy of their laws, but neglected such measures as might have actually maintained their superiority in the market. In the long list of States' Resolutions registered on the Hamburg question no mention is made, till it was too late, of any proposal either to relinquish the system of the herring laws or adapt it to circumstances. The Dutch Ambassador's reports on the subject were invariably laid before a Committee of the Herring Towns Delegates to the States of Holland, who had been trained to a stalwart and uncompromising belief in the herring laws' impeccability ; and upon their constant advice the year 1716 was wasted

in futile representations to Hamburg, to the effect that admitting early herring in the market was tantamount to ruining Hamburg trade. Hamburg traders by their conduct manifested a contrary opinion ; but to such evidence Dutch legislators were blind, being accustomed since long years to consider the trade's regulation as their exclusive business, and their supreme wisdom as the only safe guide for all parties concerned.

The course of events strikingly belied this policy of self-importance and obduracy. While the Dutch Ambassador was memorialising the Government of Hamburg upon his principals' instructions, his colleague of England succeeded in concluding a convention relative to the importation of British herring in Hamburg, which, when a copy of it had after some fruitless efforts been obtained and sent to the Hague, was there judged irreconcilable with the treaty of 1609, and gave rise to fresh protests on the Dutch side, and high-toned rejoinders from the Hamburg senate, in the course of the spring of 1719. As a conclusion the States acquiesced in the convention between England and Hamburg, "readily believing the latter city to have had good reason for concluding it," but at the same time instructed their ambassador to strictly supervise the application of the treaty of 1609 to British herring as well as to Dutch. It may be doubted whether this control was exercised with adequate vigilance, or whether it was possible so to exercise it. At any rate for the next ten years the matter seems to have occasioned no further difficulties.

In 1722, Dutch dealers indeed complained of their herring being re-packed by their Hamburg correspondents, and considered the expediency of transferring their staple importations to Bremen, whereupon the governor of the

rival port of Altona tried to secure the staple market for his place, and conferred with the Dutch Ambassador at Copenhagen on the subject.* But there is no evidence of this plan having led to any result, and Hamburg in the next years retained the transit trade of Dutch herring bound for the greater part of Germany.

In the course of the year 1731, the Republic's Embassy at Hamburg being then held by J. J. Mauricius, a diplomatist of great vigilance and activity, a series of complaints about Scotch early herring being sold there without a certificate reached the States-General; and it appeared from the ambassador's despatches that the Dutch brands were gradually disappearing from the market. Mauricius at the same time sent over a copy of a new convention between Great Britain and Bremen, dated October 17th, 1731, which opened the latter market for Scotch herring without any restriction. With Bremen the Republic had no treaty, so to prevent the loss of that city's market for early herring there was nothing to be done but leave the Dutch at liberty to concur on equal terms with the Scotch fishermen; but this measure was never thought of. Hamburg, on the contrary, was still bound by the treaty of 1609, and with that city a fresh exchange of memorials and remonstrances was opened, the result of which, in 1732, was another promise from the Senate that the treaty of 1609 should be strictly adhered to. Similar difficulties arose in 1737, and led to an identical result, viz. the receipt by the Dutch Ambassador, for the third time, of an "*extractus protocolli*" to the effect that the Hamburg Senate was disposed to observe the treaty of 1609. And while transmitting this document to his patrons, Mauricius ventured to express his opinion "that they of the Grand

* *Res. Holl.* 1722, pp. 398, 531; 1723, p. 29.

Fishery had better do their utmost to keep the Hamburgers in their present favourable mood."

There was but one way of following this sensible advice, viz., to take measures in order to stock the Hamburg market in time, and not keep the dealers waiting for Dutch herring till the time required for lawful catching, packing and branding of the fish had elapsed. But the college as yet would not be brought to give up their habits of leisurely observing the placards to the letter; and of course the Hamburgers, treaty or no treaty, went on dealing in early Scotch herring, to the Dutch exporters' incalculable prejudice. In 1750, the then Dutch Ambassador Buys once more reported considerable imports of Scotch herring without a certificate, and in the course of the next two years, upon the States-General's instructions, delivered several remonstrances to the Senate and was answered by the usual "*extractus protocolli*," containing promises, the fulfilment of which never came. The Republic, time after time, let herself be silenced by these stale promises, and still kept up her worn-out belief that the treaty of 1609 was for Hamburg's good, and could conveniently be observed there. At last, in July, 1752, it appeared from one of Buys' despatches that a cargo of English herring had been sold at Hamburg without a certificate *before Dutch herring had been heard of by anybody upon the market*. And now, after some forty years' steady perseverance in a rotten system, and fruitless and futile efforts to enforce that system upon others whose interest was opposed to it, the College at last, upon Buys' most pressing advice, made one single tardy concession which, if made in time, might perhaps have prevented all the difficulties just now related. They asked, and of course obtained, the States' permission to send herring to Hamburg direct from the North Sea. This was

a breach of some width in the system ; for it was a derogation from the laws made to uphold the herring markets of Holland ; and besides, herring brought straight to Hamburg was of course to go without the sacred brand of the Dutch assayers. For these reasons there was much opposition to the plan. The delegates from Enkhuizen foresaw "the most ruinous consequences" if it were to be adopted ; and by way of a transaction the exports of herring to Hamburg direct from the fishery were restricted to three vessels' cargoes in 1753 and the next year. The step was taken, but the States hung back from taking it thoroughly, and still did things by halves. Nor were these restrictions abandoned when the measure, such as it was, proved a brilliant financial success. In 1753 two Dutch sale-hunters brought the first herring to Hamburg and sold it, *although unbranded*, at fl.1562, and fl.814 a last severally, whereas the first English herring-ship, having reached the same port a few hours later, made only fl.543 for the same quantity.* But even this could not convince the ultra-conservative Dutch legislators of the expediency of trying the experiment on a larger scale. Having so far belied the provisions of the opposition in the Herring College, the experiment was indeed repeated in the next years, but always with a very few ships. Although of course involving a tacit admission of the existing legislation's noxiousness, these exceptional expeditions were to the very last treated as an irregularity contrary to the law, and strictly limited in consequence. If, having succeeded with three ships, Holland had next sent thirty and aspired to send three hundred from the North Sea to Hamburg, there is reason to believe that great profits might, as of old, have been made in that market ; for the eagerness for "new" Dutch herring was

* *Ned. Jaarboeken*, 1753, p. 1226.

now proved to be unabated. As it was, a few vessels only were sent, a few shipowners made handsome profits, and the trade's decline was not for a moment retarded by the event of 1753. The market was not entirely lost ; in 1768 Hamburg and Bremen were still markets for Dutch brand-herring.* But the shower of gold which used to be poured down upon the Dutchmen who landed the first herring was now, if not transferred to, at least shared by, others. Hamburg had grown accustomed to see British vessels first in the market, and even when competition was brought on a square footing in 1753, Holland could not regain what was lost.

The herring fishery's general history now takes us forty years back, after the above digression relative to the Hamburg affairs.

Some renovations and ampliations of the placards against exporting herring barrels, staves, nets, and fishing implements in general, which were enacted in 1719 and 1725,† first show that even after the peace of Utrecht the fishery's extension was not such as to open a sufficient inland market for the industry of those who fabricated fishing materials. No such renovations were required at the time when Holland wanted all the barrels and nets she could produce ; and if the supply now exceeded the demand, the herring legislation certainly was one of the causes. The trades of coopering and net-making might, in virtue of the renown of Dutch barrels and nets, have survived the fishery's greatness if the former's produce had now been allowed to be exported. But such a departure from the established rules was against the legislators' views, and the prohibition once made in order to

* *Den. Koopman*, i. p. 237.

† *Groot Placaetboek*, v. 1580, and vi. 1433.

prevent a scarcity of fishing materials, was maintained at a time when its only possible effect was to make the auxiliary trade share the decay of the principal one. It certainly did at times prevent coopers from selling off their stock, as is proved by the following facts. On January 9th, 1722, a change was made in the lawful dimensions of the herring barrels as established in 1582. As, however, a considerable stock of staves, hoops, &c., made under the old regulation was still upon the cooper's hands, and unexportable under the placard of 1719, branders and assayers were, by Resolution of the States of Holland, empowered to brand such barrels until June 1st, 1722. And to prevent the branding at a later date of barrels made upon the old model, it was further enacted on June 2nd, 1723, that each brand apposed to a barrel should henceforth mention the year of its branding.*

Despite these sundry provisions against the depreciation of the Dutch brand, herring bearing that mark of excellence was more than once, at this very period, shown to be of inferior quality. In 1721, the magistrates of Stettin† or "Old Stettin" (Oudstetijn) again remonstrated with the States of Holland, about their brand-herring's quality and packing, and were put off with assurances that the Dutch laws on packing &c., were maintained with the utmost possible severity. At the same time the Stettiners were invited, as they and the Dantzigers had been before, to co-operate towards the maintenance of the Dutch laws by transmitting to the States the branded stave of each herring barrel which should have occasioned complaints as to the quality of its contents, in order to have the guilty steersman or brander detected and punished. There is no

* *Groot Placaetboek*, vi. pp. 1431-2.

† *Res. Holl.* 1721, pp. 578, 618.

instance on record of the Stettiners having acceded to the invitation ; but in 1727 they again found reason to complain of Dutch herring being bad.* It would not be worth while to mention such incidents as these, if they did not stand as curious samples of the Dutch legislator's candid belief, against all evidence to the contrary, that his work was perfect and could not but be admired and seconded by all who had dealings with the Grand Fishery's produce.

While Holland tried, by such means as these, to maintain some of her herring fishery's ancient splendour, foreign competition rose and prospered in proportion to its decline. It will be superfluous in this place to digress upon the rise in the business in Great Britain at the time.† Nor was Great Britain the only concurrent. In 1727, a privileged fishing company was chartered at Nieuwpoort, in the Austrian Netherlands, against whose competition measures had accordingly to be taken. These measures were once more based on the customary belief that the existing system, if thoroughly enforced, sufficed to put foreign competition down. Instead of taking steps to place the Dutch on an equal footing with them, the Herring College, fully convinced that without Dutch sailors a foreign society could do nothing, sued for and obtained a renovation, by the States General, of the prohibitions against taking service on board a foreign fishing vessel, and the penalties against breach of this law were aggravated by the semi-barbarous enactment that the families of such fishermen as should be abroad in foreign service should be removed from their dwelling-places and be entitled to no

* *Res. Holl.* 1727, p. 5.

† *Europische Mercurius*, 1720, i. p. 279.

succour from the public poor-houses.* But no laws, however severe, could withhold the vital elements of the Dutch fishery from taking refuge abroad in their present state of decline, as is shown by an extensive correspondence carried on in 1727 and 1728 about a Dutch vessel arrested for smuggling nets, &c., to Nicuwpoot.† The Nicuwpoot business does not appear to have been prosperous, but Dutch competition certainly was no party to the scantiness of its success; for, in 1736, its further encouragement was considered by the Belgian authorities, mainly upon the plea *that Dutch herring was not imported into the Austrian Netherlands in sufficient quantities* to supply the fast-day requirements of the Catholic population.‡ And this, again, is not a matter of wonder, for the Grand Fishery was by this time reduced to about one-tenth of what it was a century earlier. In a Paper contributed to the often-mentioned periodical “den Koopman,” in 1768,§ it is stated that only 219 herring-ships and 31 salc-hunters sailed in 1736. This precise statement, being the first instance of herring statistics during the trade’s decline, is sufficient proof of what it had been brought to in the course of a century, by frequent naval wars, and by its inability to compete with foreigners at a time when peace allowed the fishing interests to be actively pursued abroad.

The renewed war with France in 1743 does not appear to have greatly affected the Dutch herring fishery. Beyond a renewal of the subsidy of fl.30,000 formerly granted for convoying purposes,|| and which had not been sued for

* See *Res. Holl.* 1727, pp. 844, 994, 1012, 1042.

† *Ibid.* 1727, pp. 1029, 1031; 1728, pp. 53, 281, 325.

‡ *Ibid.* 1736, p. 666.

§ “*Den Koopman*,” vol. i. p. 236.

|| *Res. Holl.* 1744, pp. 380, 391.

between 1715 and 1743,* and a further resolution of July 7th, by which one ship of war was detached to protect the herring fleet, no trace of the war's effects upon the trade are visible in such documents as form the basis of the present narrative. The institution of a fishing company in Sweden, reported by the Dutch ambassador in 1745, did not elicit any particular measure from the States. Matters became different when, in 1750, Great Britain took steps for promoting her herring fisheries on a very extensive scale, by chartering a company with a capital of half a million sterling and the promise of considerable premiums. Such protection as this could not but reflect on the Dutch concurrents; and from the day on which England definitely adopted the policy of encouraging her fishery out of the public pocket, the Dutch shipowners' cry was for having the same expedient resorted to. In 1749, the Grand Fishery had spirit enough left to decline a subsidy of fl.50,000 in consideration of the Treasury's exhausted state;† but when England in the next year set an example of paying fishermen out of the public purse, no such generosity further occurred, and Dutch fishers likewise began to look to the Exchequer for the profits which the sea no longer yielded. Direct premiums were not indeed resorted to at once. Protection was first applied to the once Grand Fishery in the shape of exemption from taxes. On the 6th of May, 1650, Holland granted an immunity of the several provincial excise duties for articles used in victualling herring-ships; and as both the number and the amount of these duties were considerable, the privilege was worthy of note. Three days afterwards, the States-General allowed an exemption of

* *Receuil v. d. Lely* p. 43.

† *Res. Holl.* 1749, p. 274.

export duty on Dutch herring, which duty then amounted to fl.2-10 (i.e. two florins and a half) per last on St. James' brand-herring, and to fl.4 on the Cologne (also called St. Bartholomew's or Elevation Brand) and the great Rouen brand.* Both exemptions were granted to last three years, and were renewed every three years till the end of the Republic. At the same time the placards against exporting herring barrels and gear and taking service on board foreign fishing-vessels were once more renewed,† and this furbishing up of old and worn armour was believed to be sufficient precaution against the now stimulated concurrency of English fishermen. The trade fared ill in 1750, notwithstanding its new privileges. A paragraph by a contemporaneous writer states the condition of the Grand Fishery to have been such, that "most busses sailed money overboard, some returned neither gain nor loss,‡ and a very few brought a small clear profit." As for the number of herring-ships sailed, it will be found in Appendix A to this work, for this and the following years, and will show the quondam Grand Fishery's now reduced and still further declining condition. The table is taken from the Committee's Report of 1854, who compiled it from the contemporary yearly statistics to be found in the "Ned. Jaarboeken." The figures are certainly exact, or very nearly so, and are the first regular herring statistics ever compiled in the country.

Further encouragement was obtained by the salt-herring fishery in 1758, when France, as a reward for the fidelity

* *Groot Placaetboek*, vii. p. 1592. A supplementary exemption from a peculiar duty on salt, known as "round-measure duty," was granted for herring-ships in 1754 (*Gr. Pl. Boek*, viii. p. 1077-1080).

† *Groot Placaetboek*, vii. pp. 1593-4.

‡ "*Speelden Kamp*," see *Ned. Jaarboeken*, 1750, p. 723.

with which the Republic kept neutral in the Seven Years' War, opened her frontiers for Dutch herring, which had long been forbidden the country. The neutrality did not tend to the Republic's political glory, and its fruit did not yield the fishery much profit; for it will be seen from Appendix A that the decrease in the number of herring-ships was peculiarly rapid in the years following 1758. Even the opening of such a market, from which English herring was excluded,* did not act as a stimulus on the once Grand Fishery, whose energy, as a natural result of two centuries' paternal regulations, was now at as low an ebb as the Republic's in general. The privilege was contemptuously withdrawn by France in 1763, after the war's termination; and as a proof that it had not been taken advantage of while it lasted, its withdrawal, instead of further injuring the herring fishery, was actually followed by a slight increase of it in the next two years (see Appendix A).

Fiscal immunities proving inefficient to restrain the fisheries' decline, direct premiums were now resorted to. Such a premium seems to have been first granted by the city of Flushing in 1754, to the amount of fl.30 for each herring-ship sailing from the said port, and for a period of

* So strictly was this exclusion maintained that the French ambassador at the Hague in the course of 1758 took steps to prevent English herring being sent to France together with Dutch, or packed in the same barrels. A placard dated July 24th and expressly prohibiting to mix up foreign herring with Dutch (*Gr. Pl. Boek* viii. 1261) was issued by the States merely to content France's apprehension, which power does not seem to have placed much trust in the famous Dutch fishing laws, which implicated a similar prohibition since two centuries. This disgraceful moment in the fisheries' history is fully described in Wagenaar's *Vad. Hist.* xxii. p. 456; xxiii. p. 77, and *Ned. Jaars.* 1758, p. 1045. See *Res. Holland*, 1758, pp. 601, 874, 988.

seven years.* A premium double the amount was allowed to fishing boats from Burch in Zealand, in 1758, out of the provincial treasury : and some inhabitants of Veere having applied for a similar bounty, the premium system was extended to all Zealand fishermen in 1759.† Holland adopted it some years afterwards.

Some fresh difficulties with Hamburg are on record in the following years. English and Dutch herring at this time were still concurrents in the Hamburg market, both under certificate as to their having been caught after St. John's Day ; and as a few Dutch sale-hunters were annually sent to Hamburg straight from the fishery, competition between them was now on a fair footing. But others began now to obtain unlawful advantage. In 1769, England and the Republic ordered their ambassadors jointly to remonstrate against the proceedings of the Danes, who managed to smuggle forbidden herring into Hamburg under certificates mentioning not the date of their catching, but the one on which the Danish trader had taken them on board.‡ Worse enemies than these appeared in the Hamburg market in 1773. A Prussian fishing company, incorporated at Embden some time before, toward the opening of the season of that year, boldly announced its intention to bring herring to Hamburg a week before the lawful term ; and it was the Prussian *chargé d'affaires*' boast, that the ancient city would not dare to refuse these cargoes, treaty or no treaty. He was mistaken in the first instance ; for an Embden vessel, having fished as early as June 18th, was refused admittance by the Hamburg authorities, although coming into the port a day after the first lawful Dutch cargo. The King of Prussia in the next year, quite in the

* *Ned. Jaarb.* 1754, pp. 92, sqq.

† *Notulen Staten v. Zeeland*, 13, 20, 21, 24, Sept.

‡ *Res. Holl.* 1769, p. 701. *Res. Stat. Gen.*, April 21st

spirit of Frederick the Great's downright politics, ordered the sovereign magistrate of the Free City of Hamburg to admit early herring from Embden at whatever period such herring might have been caught ; and when the order was protested against, vouchsafed no answer. Hamburg excused herself to the Republic "as being unable to withstand a powerful neighbour ;" and the States, who at this period of their government were as a rule very anxious to keep out of harm's way at any price, did not venture any opposition. The herring treaty of 1609 being thus virtually annulled, there was now, if ever, good reason for Holland to allow her fishermen to fish as early as the Embdeners ; the more so, as the Dutch ambassador Hop had recently, in 1770, strongly impressed upon his Government the stringent necessity of being early in the market at whatever cost, since the first herring, whether good or bad, English, Dutch or Danish, was sold there at fabulous prices. But once more the States were deaf to the most urgent expostulations, and though every shadow of observance of the treaty of 1609 was now withdrawn, still kept their St. John's rule upright.* It would indeed appear from such facts as these, that some notion at the time prevailed to the effect that it was better to catch herring after St. John's and find no market for it, than to catch it earlier and sell it at good prices. The system was maintained with the more obduracy in proportion as its powerlessness to do any good to the fishery became more strikingly apparent on all sides.

The Grand Fishery was now indeed beset on all sides. Denmark, in 1767, chartered a herring fishery, and, in 1774, prohibited all importation of foreign fish. Austria did her utmost to promote the fisheries of Nieuwpoort and Ostend.

* *Res. Holl.* 1770, p. 1272 ; 1773, p. 485 ; 1774, p. 496 ; 1775, pp. 155, 293. *Res. St. Gen.* 1775, p. 419.

England persevered in encouraging hers by considerable bounties. Prussia, besides making free with competitors in the summary way described above, in 1775 prohibited Dutch herring to be imported in July, August, and September of each year.* The trade in Holland and Zealand, as the often-quoted writer in "*den Koopman*" picturesquely states,† had, "despite all unceasing offerings up of sighing prayers and zealous heaven-solicitations, aye, notwithstanding all public supplications in the Reformed Churches of these countries by so many uplifted hands and hearts, come to diminish from year to year, a matter of wonder as regards the one, and of sorrow with respect to the other." Besides leaving the trade at liberty and repealing the herring statutes, which measure was never thought of by an enlightened and paternal government, there was but one remedy as yet untried, viz., direct bounties to fishermen out of the tax-payers' pockets, besides the fiscal immunities they were already possessed of. This last resource of all protective legislation, which as shown above had been adopted in Zealand before, was accordingly sued for in Holland, in May 1775, by "those interested in the herring fishery at Delfthaven, Rotterdam, Schiedam, Vlaardingen, Maassluis, and in the north quarter at Enkhuizen de Rijk and Noordend, being the whole of those concerned in the trade in Holland and West Vriesland."‡ No less a premium than fl. 600 for

* *Res. Holl.* 1775, p. 445 ; 1777, p. 326 ; *Res. St. Gen.* 1775, p. 277.

† "*Den Koopman*," i. p. 235.

‡ It is to be noted that, according to this enumeration, the herring trade had before this been entirely abandoned at Hoorn and Brielle, where it was formerly exercised to some extent. The towns named in the text petitioned as severally concerned in the common interest, and not as members of the College, in which several of them were not incorporated.

each buss was asked for, besides a bounty on exportation of herring at fl.1 per ton, and a recommendation *ex officio*, that the inhabitants of all poor-houses, and similar establishments, should be fed on herring at least twice a week. The College of the Grand Fishery examined the request, and of course seconded it, "because the business could not be kept going without notable assistance." The College besides reminded the States that, having in 1748 refused a proffered subsidy when not required, they were entitled to it now they could not do without it. They omitted to state that the subsidy rejected in 1748, had been formerly accepted readily enough whenever there was occasion for it, and that the said subsidy was widely different from the premium now sued for ; the former being a grant to the central direction of the fisheries to meet convoying expenses, and the latter a direct payment to each skipper out of the provincial treasury, to be obtained in full peace, and upon no other consideration than the fact of his having sailed for herring. The States of Holland, however, granted the new bounty by Placard of May 19th, 1775.* Upon mature consideration, related in the intolerably tedious style of the period, they allowed fl.500 to the proprietor of each herring ship which should sail in the course of the next two years. The other measures sued for, viz., the exportation bounty and the order to the poor-house boards to feed their poor on herring, were both declined.

It was expected that in the course of the two years for which the bounty had been allowed, the herring trade, thus encouraged, should beat foreign competition out of the field and regain its former greatness. And as a fact, now they were sure of a bounty, the number of busses increased

* *Res. Holl.* 421, 464. *Groot Placactboek* ix. 1303.

from 158 in 1775, to 179 in 1776. But they were now fishing more for the premium than for herring, and accordingly, when after the lapse of two years the bounty was reduced to fl. 400, in order to maintain equality with the amount allowed to whaling vessels, the number of busses sailing decreased faster than ever, as shown by Appendix A. In 1780 it came down to 151, or about as low a figure as had occurred before bounties were granted.

The war declared by England to the Republic on December 20th of that year inflicted another heavy visitation upon the herring trade, although at the war's outset the fleet, then not yet returned from the Deepwater, escaped destruction by a hairbreadth. The moment the declaration of war was known at the Hague, a fast-sailing sloop was sent to warn the busses; and though closely chased by British cruisers, the vessels all got safe home, where their return was commemorated by a day of public prayer and thanksgiving, and the coining of a medal.* But there was no durable occasion to rejoice. The Republic had scarce men-of-war enough to cover her coasts; convoy was therefore out of the question, and on January 26th, 1781, a general sailing prohibition, improperly styled "embargo," was laid on all Dutch merchant and fishing vessels, and not repealed even upon the fisherman's most urgent request. A negotiation which the Dutch ambassador at Brussels was directed to open with his British colleague, with a view to the parties' engaging to leave each other's fishermen unmolested,† led to no result. Herring was now, perhaps for the first time, actually *imported* into the Republic from Denmark, and the Danish Herring Company kept an agent at Amsterdam, who tried,

* *Ned. Jaarb.* 1781, p. 250.

† *Res. St. Gen.* 1781, p. 333.

though in vain, to obtain an immunity of import duty for his principal's article.* No herring busses sailed during the season of 1781, and this time, as a further derogation from the herring laws, the States-General saw the expediency of allowing shipowners to sell their vessels abroad, under a promise of buying them back in better times, and subject to the advice of the Admiralty Board on the Maas for each special case.†

In 1782 it appears some Dutch busses went about their trade, and fished unmolested under the British men-of-war's guns,‡ but this was a mere act of toleration, as passports were only exchanged in 1783,§ pending the negotiations which on August 28th of that year led to the signing of peace preliminaries. No less than six hundred passports were applied for at the time by the local fishery boards in several Dutch fishing towns; but only 120 busses, besides a few trawls of the coast fishery, appear to have sailed. The trade was recommenced on a somewhat larger scale, but as yet without a premium, in 1784. In the next year, "those concerned in the herring trade of Holland and West Vriesland" once more sued for a bounty of fl. 700 or 800 for each buss, which was granted in 1786 to the amount of fl. 700 for each ship that had sailed in the preceding year. At the same time the Admiralty of the Maas having reported that William Cunningham, Receiver-General in Ireland, had tried to induce a skipper from Vlaardingen to establish himself on the Irish Coast, the prohibition against engaging in foreign fishing concerns was renewed once

* *Res. St. Genl.* 1781, pp. 647, 734; *Res. Holl.* 1781, p. 778.

† *Res. Holl.* 1781, p. 1286; 1782, pp. 85, 121; *Res. St. Gen.* 1782, p. 1388.

‡ *Ned. Jaarb.* 1782, pp. 566, 663; *Vervolg op Wagenaar*, pp. 4, 376.

§ *Res. St. Gen.* 546, 560.

more by Placard of May 3rd, 1786.* In 1788 the bounty system was regulated on a footing intended to be durable, a premium of fl.500 per herring buss being granted by a States of Holland's Publication dated April 17th, to be repeated annually for twelve years.† The measure once more called forth a slight increase of the trade towards the Republic's end, although the number of 200 busses was never reached. Fishing laws were maintained to the end. A renovation of the edict against sending herring to the Weser and Elbe unless cured, packed, and branded according to the law,‡ which law had been last re-enacted in 1715, at the outset of the difficulties with Hamburg, is the last act of legislation on herring fisheries under the Republic.

CHAPTER II. .

WHALE FISHING.

THE *origines* of both Dutch and English whaling coincide with the beginning of the second decade of the seventeenth century.

Spitzbergen having been discovered by Van Heemskerck in 1596, and by British mariners the next year, reports about the seas off this island being very full of whales, soon began to spread, and set ship-owners' imagination and spirit of enterprise working in both countries. Still, in Holland, some time yet elapsed before any one ventured in a trade so entirely new. One Captain Huygen van Linschoten, in 1601, published an account of his voyage to the Arctic seas, accomplished in the years 1594-5; and he

* *Res. Holl.* 1786, p. 2952. *Gr. Plac. Boek.* ix. p. 1310.

† *Groot Plac. Boek.* ix., p. 1313.

‡ *Ibid.* ix. p. 1315.

described the whales, their tameness and multitude, and added, "A goodly fishery might be made upon these animals, if people would turn their thoughts that way.* But in the next years nobody did. The novelty and risk of the thing probably deterred single-handed enterprise; and subscriptions towards a whaling company are not reported to have been collected until the year 1611. The two first Dutch whalers sailed to Spitzbergen in 1612, but failed utterly: firstly, in consequence of outrages committed upon the ships by English concurrents, and, secondly, from lack of experience how to manage the business. Having sailed in quest of the whale, the Dutch found securing and killing him a very different sport from their accustomed business of netting the herring and hooking the cod, and were unsuccessful till the fashion of hiring harpooners from the Bay of Biscay came into use, when the trade at once proved a promising business. Frenchmen from Biscay, and from St. Jean de Luz especially, had practised whaling at a more remote period, when a peculiar kind of whale was found off their own coasts. They seem to have afterwards followed the animals to Greenland and acquired a degree of training which fitted them to teach the Dutch the art of whaling, in which the latter soon became such adepts as to find plenty of skilful harpooners in their own country.

The command of a whaling expedition was at first divided. The navigation department belonged to the ship's master; but when in sight of the fish he abdicated, and the harpooner took the direction of the further proceedings upon himself. By his orders boats were manned, fish attacked or left alone, and when killed towed alongside and left in the water till they "rose," so as to enable the

* P. 7.

men to stand on them, which period was the fit one for slicing or "flensing" the blubber. As the harpooning and blubber-carving business was the most important in the eyes of the ship-owners, the harpooner of course was a great personage on board, and his authority seems at first to have exceeded that of the skipper or "commandeur."*

Spitzbergen, as said before, was the cradle of the whaling industry. Its seas were then alive with whales; and, moreover, its geographical position and the nature of its coasts afforded the trade peculiar advantages.† In consequence the shores of the newly-discovered island were soon the theatre of contentions between British and Dutch whalers, as both nations claimed to be its first discoverers. A collision between the rivals in 1612 (see Chap. V.) led to the chartering of the Dutch Arctic Company (*Noordsche Compagnie*).

This company appears at first to have borne a merely private character. Subscriptions towards it, as said above, were raised as early as 1611. In 1612 they made their first and unlucky whaling attempt, after which the States made it their business to succour them. This was first done in 1613, by a prohibition to all Dutchmen fit for whaling service to take such service abroad,‡ in order to prevent a scarcity of men trained to the business. In the same

* *Zorgdrager*, Bloeyende Opkomst der aloude en hedendaagsche Groenlandsche Visschery, p. 99. The author speaks of but one harpooner, but of course the vessels carrying five or six whaling boats had several men to perform this part of the service. The personage mentioned by *Zorgdrager* is probably the chief harpooner, who in the first years of the trade was always a "Biscayer." Several harpooners are mentioned in the lists of some whaling crews which have been preserved.

† *Zorgdrager*, Bloeyende Opkomst, etc., p. 160.

‡ *Res. St. Gen.*, March 23rd, 1613.

year the company sued for a charter from the States, which was granted them on January 27th, 1614, and in virtue of which they set up as monopolists, after the manner of the East India Company, then already extant.

Their charter of monopoly, though applied for to last ten years, was at first granted for three only.* It conferred on them the exclusive right "to trade and fish from these United Netherlands, on or to the coasts of the lands between Nova Zembla and Fretum Davidis," including Spitzbergen, Beeren-Eiland, Greenland, etc. Partners in the company were to be entitled "not only to the profits of their money in proportion to the sums they shall have ventured, but also to all such further advantages as shall arise to the company within the aforesaid time, whether pertaining to the administration of the said company and equipage, or otherwise." On April 4th, 1614, towards the beginning of the whaling season, the States-General decreed that the company's ships should sail under convoy, and pay last-money; and in the next years one or more of the States' men-of-war generally sailed with the whaling fleet. The object of these warlike expeditions, and of the company's own armaments, was twofold. Besides catching whales, they meant to discover new countries, and as a fact, made several discoveries of islands in the Arctic seas. Their charter, as shown above, included such islands in their fishing monopoly, which circumstance of course stimulated their exploring ardour. The principle that the discoverer had a right to profit by his discovery, was applied by the Republic with remarkable fairness. In 1618 the States of Holland granted their worst enemies,

* *Groot Plac. Boek.* i. 670. The document is also to be found in Aitzema, *Saecken van Staat en Oorlogh*, vol. ii., p. 356; *Zorgdrager* II., p. 173; *Wagenaar Vud. Hist.* vol. x. p. 68.

the Dunkirkers, the right to fish off a small island discovered by some of them, provided they should sail thither under Dutch colours, and contribute towards the expenses of the common defence, *i.e.* pay last-money.* The foreign discoverer's rights were thus respected at the price of a breach of the company's monopoly.

The ardour for discoveries on the company's side was great. They even seriously attempted the north-east passage, and towards the opening of the whaling season of 1615 resolved to send some ships to China, or "Cathay," by that route, and applied to the States-General for permission, if obliged to return by the Indian seas, to water and victual their ships in the colonies then comprised in the East India Company's monopoly.† The whaling ships and their convoyers seem from the very first to have sailed in a sort of squadron; for it is registered that on April 29th, 1614, the States-General drew up an instruction for "the commander of the ships, both of war and others, destined to the Northern islands whether for the purpose of whaling or making discoveries." Their occasion for convoy and armament was constant and pressing; for besides repeated difficulties and conflicts with British whalers, they in 1616 had to provide against apprehended violence from the King of Denmark, who in the said year set up a claim to the exclusive right of fishing on the shores of Greenland. Both these matters will be treated of in another chapter. The States-General in the course of the year 1616 granted the Arctic Company no less than five convoying men-of-war, and, moreover, lent them artillery to arm their own whaling vessels.‡

* *Res. Holl.* 9th April, 1618, p. 591.

† *Res. St. Gen.*, 2nd April, 1615.

‡ *Ibid.* April 13, 28; May 11, 12; June 2, 1616. See ch. v.

Fishing operations were in the meantime commenced on a large scale, and a permanent establishment was set on foot on Amsterdam Island, near Spitzbergen, including warehouses and accommodation for boiling blubber and making barrels. This factory, called *Smeerenburg* (or Oil-city), in course of time formed a village, which in 1636 was fortified and provided with guns and ammunition. *Smeerenburg* of course decayed with the Arctic Company, but its remains were still to be found in 1768,* long after the first prosperous days of the trade had ceased.

A very thriving business was at first done by the company, notwithstanding frequent collisions with foreign, and especially with British, concurrents. In the very year of their chartering they sent out eighteen whalers, and the number increased greatly in following years. The Spitzbergen shore waters in these times were extremely redundant with whales; the shores were accordingly in a few years covered with blubber boilers and warehouses, and swarmed with whalers from several countries. The company's charter was prolonged in 1617 for the space of four years, the area monopolised this time including the island of Mauritius or Jan Mayen, discovered since 1614; and such was the number of fish caught by their skippers, that the whaling vessels did not suffice to carry home the blubber, oil, and whalebone, and several ships were chartered year after year solely for this end,† sometimes bringing to Amsterdam in one summer two freights of a thousand quarters of train oil each.

In spite of this extraordinary prosperity of the trade, discord arose between the Arctic Company's partners in 1621, towards the expiration of their charter. There were

* *Den Koopman*, i. p. 239; cf. *Zorgdrager*, p. 191.

† *Zorgdrager*, p. 180.

several chambers, or separate boards; in the company, viz. one at Amsterdam, one in the towns on the Maas, one in North Holland (or the "North Quarter"), and one in Zealand; and these had agreed to a repartition of conveying, and other general expenses between them. In 1621, the charter being about to expire, a change in this repartition was desired by some, and opposed by others; and as very high disputes arose on the subject, a simple renovation of the charter under these circumstances was impossible. The rival parties laid their differences before the States of Holland, who, on January 14th, 1622, appointed a committee to inquire into the matter and effect a reconciliation. These umpires proposed to leave the repartition as it was, viz., a quarter of the common expenses for each chamber. But to this the parties did not agree; the "small company," by which name the chamber for Zealand, though not then a separate body, seems to have been designated, pretending to pay less. There were, moreover, differences about the right to establish blubber boilers, &c., on some parts of the available coasts, to which rights both Holland and Zealand pretended. The upshot of the matter was the separation of the Zealand chamber from the company, and their establishment as a separate corporation. On May 28th, 1622, the States-General issued a placard assuring the Zealand company the right of whaling on the coasts of Mauritius or Jan Mayen's Land, and enjoining both parties not to trouble each other's establishments there, as the island was large enough for both. Upon this provisional charter the fishery was carried on in the course of the year, but the contending parties in the same year came to a definite agreement, in virtue of which, on December 22nd, the charter of 1617 was renewed for twelve years, for the

benefit of both the companies of Holland and Zealand, whose rights to the whole available whaling area, Jan Mayen included, were by this Act made equal.*

It may be mentioned here that in the early days of the whaling trade a rival concern sought to obstruct its progress. When in 1621, the Arctic Company applied for their usual convoy, their request met with some opposition in the States, on the plea "that it had as yet to be established whether the public at large should profit by the whaling business, whereas any measure taken for their protection was sure to hasten the ultimate ruin of the ancient and respectable industries of manufacturing and dealing in rape-seed oil."†

But such arguments as this prevented neither the granting of the demanded convoy nor the trade's general prosperity. A very tempting account of the latter, about and after the time now spoken of, has been handed down to posterity by an author before quoted, Zorgdrager, who, however, wrote about 1720, and was then a retired whaling commander, and may, both as an old man and an old sailor, have been inclined to magnify the splendours of yore and the exploits of his predecessors on the deep.

Dutch vessels, he says,‡ used in the whaling season to lie alongside of each other in Smeerenburg Bay, so close together that boats could barely pass between them, and tow aboard the oil barrels manufactured and filled ashore. The vessels were moored safely, three or four miles from the high sea, in an excellent roadstead, having an anchor

* *Groot Plac. Boek.* i. p. 674; *Res. Holl.* 1622, pp. 627, 641; *Zorgdrager*, p. 181 *sqq.*

† *Res. Holl.* 1621, p. 403; *Res. St. Gen.* April 28th and 30th, and May 15th, 1621.

‡ Pp. 174, 191.

seaward, and fastened by ropes to large whale's ribs set up on shore as mooring stocks.* From this station the fishing business was done at ease, without unmooring the vessels, by boats cruising in the bay, which was uncommonly full of fish. The ships were manned double, one half of the crews being constantly employed in killing whales and towing them ashore, and the other in cutting the blubber, preparing the train oil, and rolling the full barrels into the water, whence they were floated to the ships and hauled on board. A fleet of merchant vessels from Amsterdam, Rotterdam, Hoorn and other ports was constantly to be found along-shore, the vessels from each town lying close to their own blubber-boiling establishments to ship cargo; and a vast stock of blubber, oil, whalebone and whaling implements was constantly to be found in the Smeerenburg warehouses, to which dealers in all the commodities of life had begun to repair, making existence in the Arctic Sea a tolerably comfortable one. Rolls, hot from the baker's, were even to be had every morning in the height of the whaling season.

The company's halcyon days did not, however, last many years. In 1633, the expiration of their charter being again at hand, they, in spite of their monopoly, complained of ill-usage by foreign competitors and the backward state of the business, and further protectory measures were taken in their behalf. It had been shown to the States that, "By the act of certain unquiet persons, envious of the welfare of these United Countries," sailors were frequently tempted forth from the company's service, and got to exercise their abilities abroad. Wherefore in the true spirit of the times, when Governments were always ready,

* Such posts have been brought home as curiosities, and may still be seen here and there in the Dutch pasture grounds, where they are used as scratching poles for cattle.

for the interest of a privileged few to prevent the people at large from seeking their gain where they best might, it was enacted that "No man living in the United Provinces should navigate to Greenland, &c., in the whaling trade, or after any sea-monsters, either from this or other countries, except it be in the Arctic or Greenland Company's service;" and heavy penalties were at the same time edicted against hiring out vessels or sailors to foreign whalers and participating in foreign whaling concerns. Dutch whaling vessels and implements were then indeed in some demand abroad. A month after the date of the placard just mentioned, the King of Denmark applied to the States-General for an exception in favour of one of his subjects, who used to procure whaling sloops and gear from Holland. The Royal letter was submitted to the Arctic Company, and I have not found whether the request was granted or not.*

The Arctic Company's charter being now once more about to expire, some enterprising inhabitants of the province of Friesland determined to try competition; and the delegates of Friesland to the States-General sought, in June, 1633, to prevent another prorogation of the Company's monopoly. But the delegates of Holland contrived to have this instance put off, and the Frisons found themselves excluded as before. Far from acquiescing, the whaling season being meanwhile advanced, they sent three ships north, and the states of Friesland, as sovereigns in the province, in the next year granted their subjects a license to exercise the whaling trade for twenty years, provided they should be entered as shareholders in a Frison whaling company chartered by the same Act (dated November 22nd, 1634). This charter was based upon the consideration that

* *Res. Holl.* 1633, p. 471.

it was "unlawful and contrary to the Union for one province to preclude another from traffic in the free sea," and the Arctic Company's monopoly had therefore no title to be respected. But the participators in the Frison Company nevertheless found it expedient to apply for the States-General's approbation on their charter, to prevent "misunderstandings and actual collisions" (*dadelijkheden*) between the whalers of both provinces. The Holland Arctic Company's Charter had meantime been prolonged for eight years, by a fresh privilege dated October 25th, 1633; but in spite of the monopoly thus maintained the States-General issued orders for Hollands whalers not to molest the Frisons. The latter accordingly fished, in virtue of their own charter, and, as it were, on sufferance from the States-General; while at the same time the Arctic Company averred the Frison charter to be void, as in collision with their monopoly. This ambiguous state of things, a result of the very ill-defined rights of sovereignty in the Republic of the United Provinces, of course gave rise to frequent disputes between the rival parties, to terminate the which the States of Holland once more offered their mediation, and had a series of meetings held between delegates from the Zealand, Holland, and Frison whaling companies before a committee of the States, in the course of the years 1635 and 1636. As the result of these deliberations, an accord was agreed upon on July 25th of the latter year. To this agreement or "treaty" (which was simply a private contract concluded before a notary) the companies of Holland and Zealand combined were one party, and that of Friesland was the other, and the latter was allowed to share the whaling monopoly.*

A repartition of common profits and expenses was

* *Zorgdrager*, p. 188; *Aitzema*, ii. p. 359; *Gr. Plac. Boek*, ii. 3018.

agreed to in proportion as three for Friesland to twenty-four for Holland and Zealand combined ; and Friesland was secured the range of the other companies' whaling area, provided they should not place their establishments nearer to each other than was reasonable. A general assembly of shareholders was to be held thrice a year, in which Holland was to have six votes, Zealand two, and Friesland one, and all parties agreed to trade only to and from the United Provinces, and keep secret, and exploit for the common advantage any new discoveries or inventions to be made by any of them. The Frisons soon afterwards established a blubber-boilery of their own at Smeerenburg, from the ruins of which part of the shore was called the "*Harlinger* Traankokery*" till late in the eighteenth century.

Notwithstanding this extension both of their capital and working power, matters went backward with the Arctic (or Greenland) Companies after the renewal of their monopoly in 1633. Several very unfavourable seasons, in which the state of the ice occasioned the loss of many vessels, contributed to their decline ; but Zorgdrager, who certainly was a competent judge of the matter, mainly attributed it to their improvident way of fishing. When the great whaling establishments near Spitzbergen were first constructed, the company seems to have counted on a perpetual affluence of whales to the same spots. But as this animal procreates slowly, and has, moreover, a propensity to migrate when much chased and annoyed, sport became rare after a few years of abundance and reckless destruction of them. The train-oil and whalebone mine had been

* Harlingen is a town in the province of Friesland, and one of its burgomasters, named Hilbrand Dirksz, was one of the first participators in the Frison whaling concern.

much overworked, and consequently became exhausted ;* and the Spitzbergen whales, formerly described as "innocent creatures," who unsuspectingly came and disported within a short distance from the ships lying off Smeerenburg, in time became cunning enough to avoid them, and retreat into the more northerly ice regions. They were, indeed, pursued from place to place, but the greater distance from Smeerenburg made the landing of the prey more and more difficult. Whalers were at last obliged to "flens" or carve the blubber and whalebone while out at sea, and carry home blubber instead of oil, whereby the extensive Smeerenburg boiling establishments and the thriving trade of the oil-ships had to be gradually abandoned, involving, of course, considerable loss of capital. This caused the ardour for whaling to slacken, and thereby prevented the founding of new establishments on other places, which was, besides, made very difficult by the fact of other nations having by this time taken possession of most of the available whaling area, and each excluding others from the shores of his own domain, to which, as stated by Zorgdrager, no foreign boat was admitted unless the harpoon were previously taken out of the "mik" or stand used in shooting or throwing it. The pretensions of Denmark relative to the exclusive right to some parts of the whaling sea will be spoken of in another chapter.

The company's charter once more expiring in 1641, the state of their affairs was such as to prevent their suing for another renewal of it. Still, whaling experiments in parts till then unvisited seemed full of promise, and the trade was accordingly commenced at once by men from several provinces and towns, as soon as the discontinuance of the

* Wagenaar, *Vaderl. Hist.* x. p. 68.

monopoly left competition free.* Not being bound to any particular place or establishment, nor burdened with a considerable capital sunk in buildings, boilers, forts, &c., whalers from Amsterdam, Rotterdam, Zaandam, Rijk and many other towns began to sail after the whales wherever they could be found, and generally brought home sufficient cargoes of blubber and whalebone. The killing of walrus and seals was likewise practised with some success after the Arctic or Greenland Company's dissolution, which took place in 1645; and the trade, which had at first been fostered by the company's monopoly, thus acquired renewed vigour after its extinction.† It should, however, be added, that quarrels and even actual deeds of violence between Dutch whalers occurred frequently in the first years after the expiration of the monopoly.‡

A trade so very dependent on climatic circumstances could scarcely yield anything like constant profit; and it is accordingly described as being "more of a lottery than a trade," by most of the authors who have written about it. A series of accounts of ships wrecked and crews miraculously saved from death by cold and starvation sufficiently corroborate this statement, and are corroborated in their turn by several placards issued at different periods by the States of Holland to secure the owner's rights to vessels abandoned in the ice in various parts of the Arctic Sea. These accidents gradually became more frequent as the whales retreated into or under the more northern ice; a period of their migrations which coincides with a considerable change in the method of fishing. During the prosperity of the Arctic Company, when whales, as related above,

* *Zorgdrager*, p. 195.

† *Den Koopman*, vol. i. p. 239.

‡ *Res. Holl.* 1644, pp. 576-578; 1645, p. 108; 1651, p. 279.

flocked round the coasts of Spitzbergen, whaling was a harmless and easy, though very profitable, summer sport, and such danger as it involved was amply recompensed by pleasant life at Smeerenburg. As the fish retreated seaward, things became less pleasant both for the ship-owner and the whaling crew; but the real hardships of the trade, as writers of the period express it, did not commence for either till the whales began to hide away in the ice, and "sea fishery" was forcibly superseded by "ice fishery." Worn-out merchant-vessels were at first used, or "risked," in this perilous trade; but the number of casualties increasing, shipowners gradually found it worth their while to provide new and very strongly built vessels,* and this circumstance caused fresh capital to be invested in the trade. In a word, as a writer in the commercial review '*Den Koopman*'† shows, the whaling trade revived when it became a less easy one, and ceased to be in the hands of a few monopolists.

Another circumstance must have contributed to this phenomenon. Whereas the herring fishery was from the very beginning regulated by law down to minute details, whalers were always left at liberty to fish where and how they judged best. They were, indeed, no less than the herring trade an object of Government solicitude, as appears, besides frequent grants of convoy, from the above-mentioned prohibitions to export whaling ships and implements and take service in foreign whaling ships. They were, on the other hand, occasionally ordered to stop their trade in times of war, and were not exempt from the financial burdens imposed upon the fisheries in general. The latter were indeed the chief cause of the only restrictive measure

* *Zorgdrager*, p. 204.

† He wrote in 1768.

ever put upon their trade, viz. a placard of May 25th, 1652, by which whalers were enjoined to carry the whole of their blubber, oil, and whalebone home and sell them in the Dutch markets "for the conservation of the custom-house duties and the market tax."* Besides this edict, which probably was never enforced with much vigilance, no working regulations were ever applied to them. There was no fishing season determined for them by law, and no rules for branding their produce. Government, however paternally minded towards them as well as others, never undertook to teach them their business. They were protected, not directed ; guarded, not led. They accordingly managed to mind their own business with generally satisfactory results, and keep their trade going when others, fettered down by a multitude of working rules, saw theirs go to ruin.

This important difference in the Government policy towards the two fisheries is fully explained by the different nature of the trades. One of the leading features of herring legislation under the Republic was to prevent unripe, or too early herring being caught ; and as the whale's existence is not limited to one season, no such measures were required for the Arctic fishery. Next, train-oil and whalebone are not subject to amelioration by any peculiar process, such as the curing of herring ; whence Dutch train never excelled, or was fancied to excel, that of other nations, and there was no occasion for branding it, or for any of the several obstructions to trade which result from such a process. Thirdly, the annual migrations of the herring shoals have always taken place at a date recurring with a considerable degree of regularity every year, and their progress through the North Sea is traced upon a constant route, whence

* *Groot Placaetboek*, i. p. 683.

herring fishermen could be told when and where to sail without exposing them to utter discomfiture ; whereas the whaler, by reason of the shifting ways of his sport, could never have done well without entire liberty of action. Thus, until the era of Bounties set in, whalers never looked for gain but to their own enterprise, spirit, and labour ; while herring-fishers were forbidden to seek it elsewhere than in the observation of laws. The latter were regulated over, and by degrees lost their energy ; whalers were free, and preserved theirs long after the herring trade's decay. These are the reasons why there never was a whaling legislation properly speaking ; and certainly the principal reasons why the prosperity of the whaling trade survived that of the Grand Fishery, although the produce of the former obtained no Government warrant as to its excellence, and whalers were by the nature of their trade exposed to far greater risks of accident. On the other hand, as regards risks by war, the Grand Fishery were worse off, being obliged to exercise their trade in seas constantly swept by the enemy's squadrons, and in the centre of warlike operations. Moreover, Dunkirk privateers seldom roved as far as Greenland or Spitzbergen, and the whaling fleets were only exposed to their depredations while sailing north or returning home. The latter circumstance, besides legislation, accounts for the fact of the Grand Fishery having decayed long before the Arctic, or as it was generally called in the 17th century, the Greenland business.

The war with England of 1652-1654, which occasioned the beginning of the Grand Fishery's decay, was also prejudicial to the Greenland trade. In April of the former year, before hostilities had actually begun, Holland resolved not only to permit the said trade for the next season, but even, if possible, to prevent its being thwarted

by lack of able seamen.* In July, the advisability of calling the whaling fleet home to prevent the vessels being taken was strongly considered, but for the moment the States of Holland only warned them to keep together "in form of Admiralties" (or squadrons) for their safety.† In December, a request of some whaling shipowners for restitution of the expense of a vessel of war equipped by them to protect their other ships, was favourably advised on by Holland,‡ from which fact it is evident that the trade was actually kept going during the summer of 1652. On March 25th of the next year, however, the States-General prohibited it,§ not only in order to keep the vessels safe in port, but mainly because Government wanted the sailors, and perhaps some of the ships, for warlike ends. Seamen who have learned their business under the Northern lights have always been found very valuable for any service; and the prohibition to sail was therefore enhanced by a reinforcement of the former edict against hiring out seamen into foreign service, and especially into the whaling business abroad.||

For the same reason, while the States' fleet operated in Sweden in 1659, the whaling prohibition was repealed by placard dated April 4th. It was indeed repealed soon afterwards (May 2nd); but "navigation to Greenland" was then permitted only on condition that the shipowners and captains concerned in the trade should put fifteen hundred able sailors at the disposal of the Boards of Admiralty or buy them off for fl.15 per head.¶

* *Res. Holland*, 1652, p. 172.

† *Ibid.* 1652, pp. 343, 387.

‡ *Ibid.* 1652, p. 659.

§ *Groot Placaetboek*, ii. p. 505.

|| *Ibid.* p. 302.

¶ *Ibid.* pp. 507-510.

The repeated wars of course took some effect upon the Greenland trade's prosperity ; and it appears that about this time whaling ships were sometimes sold to foreigners, or freighted to sail under their flags. The prohibition against this proceeding issued in 1633, for the Arctic Company's benefit had of course become void upon that body's dissolution ; and a fresh prohibition against letting Dutch vessels go into foreign whaling service was therefore enacted on March 10th, 1661, and renewed on December 14th, 1663.* Both this edict and the penalties against Dutchmen taking whaling service abroad were strictly maintained. In 1662, the magistrates of Emden interceded in favour of one Klaas Dirks Meunsz of Edam, who had served as commander in a whaling vessel from Emden ; but instead of acceding to their wish, Holland ordered the prosecution against the culprit to be maintained without any consideration, and on March 20th of the next year re-enacted the placard, adding expressly that Emden should be considered as a foreign town.†

The war against England in 1665 brought a fresh prohibition over the whaling business,‡ when as a consequence "certain gain-seeking persons" once more sold their vessels abroad, to the effect that the laws against such sales, and against exporting whaling implements, were re-enacted in the course of the spring of the said year.§ Still the danger to the trade did not appear to be very imminent, as the English naval force was at this period required on other service than that of pursuing whalers to Greenland. Several Dutch shipowners there-

* *Gr. Pl. B.* ii. pp. 2639, 3087.

† *Res. Holl.* 1662, p. 523 ; 1663, p. 114.

‡ Placard dated Jan. 24th, 1665 ; *Gr. Pl. B.* iii. p. 291.

§ *Gr. Pl. B.* iii. 292-293.

fore prepared to try their luck in the Polar Seas as soon as the Republic's naval preparations had come to a close, "deeming the prohibition might as well be withdrawn after the country's fleet had sailed;" but they were reminded of the placard of January by another dated March, 1665, besides which, on the 25th of April, the States went the length of cancelling all contracts between sailors and shipmasters or shipowners for the Greenland trade. The whaling prohibition was moreover renewed in December, 1665, and February, 1666; and there was no whaling, as far as can be traced, during the whole of the war. No sooner had peace been concluded (July ult. 1667) than Dutch whalers set about their business with renewed energy, to stimulate which an amnesty was granted in 1669 to all whaling commanders and sailors who had, against the placard, taken service abroad during the late war. Moreover, Holland in 1670 decreed differential duties against the importation of foreign whalebone and blubber,* while the prohibitions against selling whaling implements to foreigners were re-enacted more than once. Zorgdrager's statistics of the trade, which begin at the year 1670, mention 148 vessels to have sailed in that year and mastered 792 whales (see Appendix B).

The disastrous war of 1672 soon put another forcible stop to the proceedings. All whaling expeditions were expressly prohibited as early as February, 1672;† and while the other fisheries were at one time re-opened during the war, the prohibition against whaling lasted for three years without an interruption. But the suspense does not appear to have done much prejudice, as the trade was recommenced in 1675, with a number of vessels scarcely

* *Res. Holl.* 1669, p. 120; 1670, pp. 434, 534, 552.

† *Gr. Pl. B.* iii. p. 298.

inferior to what it was before the war. And now a vestige of working regulations was for the first time imposed upon the trade, but for reasons widely different from those prevailing with the herring fishery. In order to ensure their sailing together, i.e., in squadron or "Admiralty," Holland decreed that no whaling vessels should sail before April 28th, and the order was repeated in several subsequent years.*

The only object of this measure was of course to promote the safety of the Greenland fleet. It was taken at the request of a body representative of the whalers' common interest, which now appears for the first time as a duly organised corporation.

A representation of the whaling interest did, indeed, exist some years earlier. In 1665, two whaling ship-owners named William Bastiaansz and A. den Hertog, sued for an exemption from taxes for all whaling vessels, and in return offered to supply the Republic's fleet with 1200 sailors; and the offer was made in the name of, and upon authorisation by, "the community of those concerned in the Greenland trade."† Request and offer were both declined, but the event appears to have occasioned a closer organisation of those concerned in the whaling trade, and the appointment of a definitive Committee, analogous to the College of the Grand Fishery. In 1675 this Committee was already invested with defined powers, and qualified to act on behalf of all without especially naming its constituents, as appears from the fixation of a sailing date by the States in the said year, upon the request of "the community of those interested in the whaling business at and about Greenland," and not of one or more individuals as repre-

* *Res. Holl.* 1675, April 4th; 1677, March 27th.

† *Ibid.* 1665, May 6th and 12th.

senting that community. This variance in the denomination, and the fact that no such requests made by some in behalf of all are on record in earlier years, justify the supposition that an organisation of the trade had not taken place since the downfall of the Arctic Company, and that such an organisation, and the appointment of a perpetual representative body, was effected between 1665 and 1675. At any rate, the Committee, or central representative body of whaling shipowners, never had anything like the attributions of the Herring College, and they never seem to have acted in any other capacity than as the spokesmen of their constituents presenting requests to the States, and the draftsmen of such bye-laws as seemed advisable for the common weal. The vast power with which the Herring Deputies were invested was a result of the herring legislation ; and no such power was held by the Whaling Committee, who had no laws to enforce, no licences to deliver, and no skippers to swear in. In their quality as draftsmen of bye-laws, the "Commissioners of the Greenland trade" in 1677 issued an order, or regulation concerning the salvage of ships wrecked, and goods lost in the northern seas. They sued for the States of Holland's approbation upon the document, which, however, was not granted till January 22nd, 1695.* The order was, however, printed in 1677, and although as yet unapproved by the proper legislator, was observed not only by whalers from the United Provinces, but also by those of Hamburg, Bremen, and Emden.† The above-named William Bastiaansz was again

* *Res. Holl.* 1677, p. 87 ; *Gr. Pl. Boek*, iv. p. 1355.

† The approbation was granted in 1695, because applied for anew by the Committee who had in the course of eighteen years "on some few occasions (*soo nu en dan*) experienced difficulties in the execution," whence their authority appears as a rule to have been unquestioned.

the first signer of this bye-law, and thence appears at the time to have been President of the Board of Whaling Commissioners. The principal dispositions of the order are as follows : When a vessel is wrecked, and her crew leave her, the first ship they meet is obliged to take them on board, and is entitled in her turn to transmit half of the men saved to the next vessel she hails. Such victuals as may be brought on board by the wrecked crew shall be consumed by themselves ; if they have none, they shall be fed out of Christian charity, and be obliged in return to do a common sailor's work.

If the crew do not leave the wrecked vessel, her commander shall be free either to accept or refuse salvage by others, as long as he remains in or near his ship. Whosoever finds a ship abandoned, shall be free to take her cargo and whaling gear on board, and on coming home be entitled to one half of the goods saved, the other half to be given up to the owner, without any further claim upon him for salvage-money, freight, &c.

Sailors, whether serving on monthly-wage or share in the returns (*Maentgelders of Parteniens*) shall be entitled to nothing out of the value or cargo of a whaling vessel abandoned by them. If they have remained near her and aided in the salvage, they shall be entitled to their wages, &c., to the amount of one-fourth of the value of the goods saved, and have no pretension whatever on the other three parts.

A vessel's crew having killed a whale and been prevented from appropriating it, remains entitled to the fish as long

Hamburg, Bremen, and Emden, were accustomed, as regards whaling, to sail in the Republic's wake ; i.e. join their fleets to hers and sail under a common convoy. *cf. Zorgdrager* p. 178.

as any of her crew shall have remained near the body. If abandoned, the fish becomes the property of the first occupant, unless it should have been killed near shore, and made fast to an anchor or buoy bearing some mark of the vessel by whose crew the fish was caught, in which case the finder has no right to the body.

The period between the years 1675 and 1685 was one of considerable prosperity for the Greenland trade, as appears from the statistics contained in Appendix B,* which also shows the extreme vicissitude of whaling luck. It will be remarked in consulting this table, that years of very prosperous fishery were usually followed by a considerable increase in the number of vessels sailed, as a proof of the unabated energy and interest with which this trade was carried on. Being no longer a monopoly, and being, besides, free from legislative working rules, there was a "considerable ardour for Greenland," as stated by a writer in 'den Koopman.'† The trade was indeed a lottery; but many tried their chance in it, often with favourable results. Five or six fish caught in a season were then considered a fair success, as stated by Zorgdrager; and the

* As this table is now given for the first time in its present shape, I feel bound to state the origin of its contents. The entries from 1670 down to 1719 are taken from Zorgdrager's book, quoted above. Between 1719 and 1738, the decennial totals are taken from Mr. Brandt's '*Geschiedkundige Beschouwing van de Walvisch-visscherij*.' The annual returns between 1737 and 1750 are collected from the periodical called '*Europische Mercur*,' and the rest is drawn from the table printed as Appendix XVI. to the report of the Commission on Sea Fisheries, 1854, which table appears to have been compiled out of the '*Nederlandsche Jaarboeken*.' The figures now given are tolerably reliable, for whenever statements as to one and the same year are found in more than one of the works quoted, they always coincide, or very nearly so.

† Vol. iv. p. 222.

number was often considerably exceeded. So great was the ardour for whaling, that when a fresh prohibition to sail was issued by the States-General in 1691 * on account of the French war, a couple of ships belonging to Dutchmen were sent to Greenland from Hamburg and Bremen, and the experiment was repeated in the next years on a scale very much larger, although the prohibition was maintained during the next six years, and the States-General had expressly stipulated all contracts between master and sailors for whaling expeditions to be void, "setting all such sailors and scafaring persons, none excepted, on their free feet, to pass into the country's service."† The trade was not lawfully re-opened till April 1st, 1697, under provision that the vessels should sail in squadron, and under a sufficient convoy, the expense of which was to be repartitioned among those concerned in the business.‡

The war for the Spanish succession once more occasioned a considerable demand for able sailors in the Republic's squadrons, wherefore all navigation from Dutch ports was once more prohibited on March 31st, 1702, and re-opened on June 23rd on condition that each ship should give up one fifth of her crew or pay 15 florins per head of them to the Admiralty officers.§ The Grand Fishery was exempted from the latter charge, but the Greenland trade was not, the difference being made on account of the superior skill of the sailors trained to the latter business. The trade rose to a high pitch in the same year, notwithstanding the crews'

* *Gr. Pl. Bock*, iv. p. 236.

† *Ibid.* p. 240 (Nov. 1691).

‡ *Res. St. Genl.*, April 1st, 1697; *Gr. Pl. B.* v. p. 376-7. *Res. Holl.* March 29th, 1697.

§ *Res. Holl.* 1702, p. 441.

decimation,* and though the expense of convoy equipped by themselves appears to have burdened them considerably. On August 18th, 1702, the States of Holland considered the request of "certain persons styling themselves the Commissioners of the Greenland Fishery," who having procured convoyers and demanded of the shipowners a retribution of 300 florins per whaling vessel to cover the costs, had met with opposition at the hands of several shipowners, who wanted the contribution for each ship to be proportioned to the quantity of train-oil brought home in her.† The contribution was either paid very irregularly, or denied outright, whence in 1704 it was two years in arrear, and part of it irrecoverable, so as to necessitate the intervention of the regular legislative authorities. On July 17th of the said year the States of Holland declared the Commissioners entitled to recover the arrears by execution.‡ As a fact, the Committee's authority, having not been hitherto expressly sanctioned by law, was at the time very ill obeyed; and this led to a Resolution of the States-General dated March 24th, 1706, § by which the Commissioners of the Greenland Fishery were authorized and qualified "to issue the necessary orders for the Groenland fleet, for the next season, and especially to establish a convenient Admiralship, determine a sailing day and rendezvous, and enact such secret orders as shall be found advisable for the conservation and well-being of the fleet;"

* It appears that whaling vessels were frequently manned with foreigners. On March 3rd, 1713, the States-General granted a request made by the Greenland Fishery Committee to be allowed *as usual* to draw sailors from Jutland for their crews, although a contagious disease was then prevalent there (*Gr. Pl. B.* v. 1579).

† *Res. Holl.* 1702, p. 441.

‡ *Ibid.* 1704, p. 419.

§ *Gr. Pl. B.* iv. p. 1564.

which orders all whaling commanders were enjoined to obey strictly, under a penalty of 300 florins, to be recovered out of their pay and available goods and chattels. This power, though at first granted to the Committee for one season only, was continued in the next years.*

A change of some importance was introduced into the whalers' proceedings about this time. They had, from the exhaustion of the Spitzbergen seas down to the season now spoken of, fished chiefly about Greenland, and restrained their operations to the seas once included in the Arctic Company's monopoly, of which "Fretum Davidis" was the western limit. It now became customary to look for whales in Davis' Straits also. It is not certain when this part of the northern seas was first visited by Dutch whalers. Zorgdrager, who was quite at home in the details of the business, does not particularly mention the Straits fishery in his valuable work, of which the first edition was published in 1720. Still, in the said year whaling in the Straits had already acquired some extension; for an immunity from last-money granted to the Greenland fishery in 1687, was then expressly extended to those who navigated to the Straits "whither a considerable part of the ships are now bound."† The same fact is evident from a States-General Resolution dated November 18th, 1720,‡ by which penalties are enacted against offering violence to the natives of the Straits shores. It appears from this edict that the first exploits of Dutchmen in the Straits were anything but glorious, and that robbery and ill-treatment of Esquimaux

* *Res. Holl.* March 23rd, 1707; Feb. 18th, 1708, &c. The subject was generally re-considered by the States in the course of February of each year.

† *Res. Holl.* 1720, p. 197, 306; *Res. St. Gen. ibid.* p. 786.

‡ *Gr. Plac. Boek*, v. p. 1581.

by them were matters of daily occurrence. Their behaviour, in a word, was that of pirates, and as such accordingly, the above-quoted Resolution prescribes those guilty of further acts of this nature to be proceeded against.

A writer in 'den Koopman' * states the Straits fishery to have become considerable after the year 1714, and a separate statistical table relative to that branch of the trade, added by Mr. Brandligt to his above-quoted pamphlet, begins at the year 1719. Zorgdrager's not especially mentioning the Straits fishery is not contradictory to these statements, for his book was written some years before it was published. The period when Dutch whalers first began to visit the Straits may, upon these several authorities, be stated to be not much anterior to the year 1720.

In the next years, besides statistics, no facts of any importance relative to the whale fishery are on record. In 1724 a whaling company was chartered in England ; † but their competition does not appear to have severely prejudiced the Dutch, as the years 1719–1728 were, according to Brandligt's statistics, a period of very considerable prosperity for the Straits trade especially. In 1731, the Dutch Ambassador to England reported on a contrivance to shoot harpoons out of a musquetoon, or portable cannon, by which the instrument was thrown fifty feet, or thrice the distance the best harpooner could cast it, and without setting the line on fire ; but though the Dutch diplomatist had seen the instrument alluded to in a London wharf, and spoke of it in highly commendatory terms, there is no evidence of its having been adopted.‡ In 1739 and the next years, Denmark's pretensions to exclusive fishing

* Vol. i., p. 239.

† 'Europische Mercur,' 1724, vol. ii. p. 32.

‡ Res. Holl. 1731, p. 172.

rights in the Northern seas, which will be treated of in another chapter, caused the Dutch whalers some uneasiness. A few of their vessels were actually taken by the Danes, and they had for some years to sail under convoy by Government men-of-war. Still these events did not materially affect the trade; for the number of ships sailed to Greenland, which were especially the object of Denmark's animosity, was much greater in the years 1739-1748 than in the preceding decade. In 1747, the Republic's war with France having necessitated extraordinary measures to get crews for the squadrons, a general obligation to give up one third of the crews to the Admiralties, or redeem them at the price of 40 florins per head, was once more laid upon merchant vessels in general; but the Greenland and Davis' Straits fisheries were expressly exempted from either charge, by a Resolution of the States-General, dated December 1st*. The favour was partly cancelled on February 19th of the next year, when the States-General resolved to allow the trade two men-of-war as convoyers without the retribution they had hitherto paid for them to the Admiralties, provided each whaling vessel should furnish five able seamen, or the whole fleet together should furnish five hundred such seamen to the Admiralties of the Maas and Amsterdam†. In other words, the whalers were to have convoying vessels without paying for them, but on condition that they should man them out of their own crews; for the men-of-war offered by the States were to carry forty guns and two hundred and fifty men each.

Besides these measures in their behalf, whaling ships were in 1750, upon the request of the Commission of Greenland

* *Gr. Pl. Boek*, vii. 515.

† *Ibid.* p. 1591.

Fishery, allowed exemption from excise duties on victuals, wine, spirits, &c., consumed on board.* The measure was indeed taken on a very liberal scale, for it was extended not only to the victuals actually consumed, but, as regards bread, to the whole quantity taken on board, even though some parts of it should be brought home again. Immunities of a similar nature were at the same time allowed to other branches of fishery ; but there is reason to believe that whalers derived peculiar profit from theirs, as they were in the habit of dealing in divers commodities with the natives of the northern countries whither they were bound. It will be seen in another chapter that this propensity to do spurious business was one of the principal causes of the difficulties with Denmark ; and it may be assumed that Dutch whalers upon occasion were not only petty tradesmen, but did by no means disdain smuggling on foreign coasts, towards which they were of course peculiarly benefitted by having some of the articles most heavily taxed in all countries at their disposal duty-free, by the States-General's express licence. Considerable light is thrown on this feature of the Greenland trade by a curious controversy kept up in the often-named periodical, '*Den Koopman*,' in the course of the years 1772 and 1773.† A free-spoken letter-writer styling himself "*Lubertus Piscator*" is especially communicative on the subject. The results of whaling in itself, he says, now amount to average losses ; and the trade is kept going by the profits of a fraudulent commerce in goods exported free of duty and smuggled ashore on the coasts of Norway and Scotland. These irregular profits are mostly pocketed by the manager (*boekhouder*) of the ship and a few of the

* *Res. Holl.* 1750-52, passim, *Gr. Pl. B.*, viii. 1253.

† Vol. iv. p. 33, 90, 194, 199, &c.

chief partners, and dissimulated in such a manner as not to let the others have any share in them ; and most of the ships now engaged in whaling are kept afloat merely because a majority of votes in the partnership are in this manner interested against their being sold or broken up, although the returns of the whaling business proper are generally very unfavourable. Lubertus' indiscreet statements were indeed contradicted by other correspondents ; but the fact that much irregular business was done at the time by Dutch whalers is not positively denied by any of them. Some of these writers, who have all made a secret of their names, account for the continuation of the trade, in despite of unfavourable results, by the fact that the whaling vessels' purveyors were at the time generally part-owners, and recovered on the price of the stores what was lost on the business itself. And this state of things they approve, in virtue of a course of reasoning strongly and curiously illustrative of the economical notions of the period. The money lost on the voyage's balance, says an apologist of the trade in 1773, goes to the ship's victuallers, commander, and crew ; *it remains in the country*, and therefore is not lost to the nation ; and the value of every whale caught, however small their number, is to be accounted as a clear profit, though the sums made by the trade do not cover the expense !

If the above controversy sets one point beyond doubt, it is the fact that towards the end of the eighteenth century there was a rottenness in Dutch whaling. Its rapid decrease in the same period, shown by Appendix B, proves that even illegal proceedings could not cover losses as a rule ; and the demonstration is wound up by the fact that in 1775 the Commissioners of the Greenland and Davis Straits fisheries applied for a bounty, and were not behind-

hand in the race for premiums which at this period characterises the whole of the sea-fishing concerns. The premium applied for was limited to 40 florins per head of the crews, besides exemption from export duty on train-oil, &c. Some objection was at first made to the plan. A Committee of the States of Holland, before whom the request was laid, considered premiums as a rule to be very useful in bringing a new trade to prosperity, but doubted their efficacy in upholding a business the decay of which was attributable to causes beyond the legislator's control, such as the development of whaling abroad, and the closing of some foreign markets. Still, the Committee were not averse to grant the trade some succour, and advised a bounty of 30 florins per head of the crew, for such vessels only as should return *clean*, i.e. empty. The matter was treated with the prolixity and slowness characteristic of the later years of the Republic's existence, and Holland did not take a decision till January 18th, 1777, when a premium of 30 florins was granted for all whaling vessels indiscriminately, and the immunity from export duty declined.* The premium was granted again in the next years.

The result of the application of the bounty system was as negative upon the whaling trade as on the herring fishery; and the table contained in Appendix B shows an actual decrease of the number of vessels sailed after bounties had been first allowed in 1777. The Whaling Commissioners accordingly in 1779 sued for an increase of the bounty to 80 florins per head of the crews; but the demand was declined. The war against England in 1781 next put

† *Res. Holl.* 1775, p. 607, 793, 990; 1776, p. 38; 1777, p. 73. The collection of printed documents emanated from and received by the States in these years, moreover contains a series of long memorials exchanged between them and the Greenland Committee.

a stop to all whaling expeditions for two seasons, in the course of which many vessels were sold out of the trade. A special permission was necessary for this, as the ancient laws against selling whaling ships to foreigners were still in vigour ; and this permission was granted by the States of Holland in 1782, provided that each person inclined to sell a vessel abroad should procure a licence from the Admiralty Board under which he resorted, and moreover that if the ship were sold to be used as a merchantman, the whaling implements should not be destroyed, but kept for better times. At the same time, the Admiralty Boards were empowered to grant permissions to hire out whaling sailors to foreigners, English excepted, under caution for their being sent back to the Republic after the war.* As a consequence, of the vessels formerly employed in the Straits fishery only nine were left in 1783, when whaling was recommenced ; and the business never recovered its losses. Premiums were granted till the end of the Republic, and were even determined for twelve years at their former amount of 30 florins per head, by one of the several Resolutions taken on April 17th, 1788, by the States-General for the fisheries' preservation from utter ruin.† Another, and a very peculiar form of encouragement was resorted to by a Resolution of the States of Holland dated October 3rd, 1788 ; viz., an "indemnisation" bounty of 50 florins for every quarter of train *wanting to a hundred* in a vessel's cargo. In order to prevent mock whaling trips, by which the said bounty might have been secured very easily indeed, certain conditions were added as to burden and equipment of ships, strength of crew and duration, and latitude where to fish. Even

* *Res. Holl.* 1782, p. 138, 174 ; *Res. St. Generaal* 1782, p. 175, 232, 273, 289.

† *Groot Placaetboek*, ix. p. 1313.

this thorough application of the premium system was of no effect. As the institution of bounties had been followed by a decrease in the trade, so their continuation and extension proved unable to prevent its ruin ; and at the close of the Republic's existence the Straits fishery, as will be seen from Appendix B, was nearly extinct, and the Greenland business reduced to utter insignificance.

CHAPTER III.

COD FISHERY.

THIS branch of the fisheries never was of paramount importance under the Republic. The name of "small fishery" (*kleine visscherye*) * which is commonly applied to it, as an antithesis to the denomination constantly given to the herring-fishery, sufficiently points out the fact. One part of the business, the cod-fishery off Iceland, was indeed an extensive concern requiring separate capital ; and as the produce of this fishery was either salted or dried, it commanded an extensive foreign market. Cod-fishery in the North Sea, and on the Dogger bank especially, was a minor branch of the trade, and indeed more or less an appendage of the herring-fisheries, inasmuch as most of the vessels

* There has been some controversy about this denomination. Some state it to have been commonly used to designate the whaling trade ; others the Iceland fishery, and the cod and fresh-fish business in the North Sea. As a fact, it has been applied to all three, but very seldom to the whale fishery, which by reason of its importance had no title to the name. In the States' official publications, "*kleijne visscherije*" is used for cod-fishery and for "the trade of the fresh" (*de neeringhe van den versche*). A Placard of 1665 expressly mentions "the Great and Small fishery, by which we mean the herring trade and the fishery on Doggersbank."

used in the latter after St. John's Day were in winter and spring sent to the Dogger bank for haddock and cod-fish. The method in which the trade was carried on by Dutchmen has always been the same as when, under the Bavarian Counts, political parties derived their names from it; viz. by lines to which were attached hooks baited with small fish of different kinds, or very early herrings. A Placard of the year 1612 expressly allowed cod-fishers to catch herring for bait before the 24th of June, provided they should not cure or salt such herrings, nor lay them in barrels, nor carry them ashore or sell them at sea.*

Keelless boats from the North Sea coast villages from early times downward combined cod-fishery on the Dogger bank with "the trade of the fresh," as shown by a Resolution of the States of Holland dated 1585, and mentioning "all fish caught by fishermen of the Side, *except cod and haddock.*" Keeled vessels from the fishing towns on the Maas likewise fished for cod in the North Sea out of the herring season; and besides, the Iceland cod fishery, which could not be combined with herring fishery, centred in some of those towns, and Vlaardingén and Maassluis were prominent in the Iceland business long before they became "herring towns" of importance. The vessels sent to Iceland were called "hookers," from the fishing gear they carried; although by their build they were fit for the herring trade also, and were used in the latter in some years when the state of the several markets, or other circumstances made a voyage to Iceland unadvisable. Still a mixing up of both trades could not occur, as the seasons for both were the same; whence Iceland fishery was a separate business, and had an organization of its own. Its object was to cure the

* Art. 2 of the herring regulations, 1604-1632; *Gr. Pl. Boek*, i. p. 733.

fish either by salting it as "*Zoutevisch*" "*labberdaan*" (also called *abberdaan*) or drying it as *stock-fish*, in both of which conditions it was a considerable article of exportation. In the fresh state the two varieties of cod-fish most caught bear the Dutch names of *kabeljauw* (also called *bakkeljauw* or *baccalauw**) and "*Schelvisch*" (the latter appearing to correspond exactly to the English denomination of *haddock*).

There is no literature to my knowledge on this peculiar branch of Dutch sea-fishery, and very few legislative acts are on record relative to it; whence its history must necessarily be very incomplete and succinct. North-sea cod-fishery had some importance as early as the establishment of the Republic, as appears from the fact that two men-of-war were sent "*ter Dogge*," i.e. to the Dogger bank, for the cod-fishers' convoy, in 1589; † and as the place, of

* The latter word was also used now and then for cod salted and dried. *Bacallao* is Spanish, *Baccalà* is Italian, and *Bacalhao* is Portuguese, for dried cod. The assonance between these words and the (now obsolete) Dutch term *baccalauw* is so striking that the question can only be whether the word was derived by the Dutch from the Roman languages, or the reverse. Holland in the 17th and 18th centuries exported great quantities of salt and dried cod to Spain, and never, so far as can be traced, imported any from that country; whence it would seem natural that the name should have been exported together with the article. On the other hand, I am not aware of the Dutch etymological derivation for "*baccalauw*," and I have heard it said, upon authority which I can neither back nor question, that in Spanish and Portuguese the word has something to do, etymologically, with *stick* (Lat. *Baculum*). In the latter case, *Bacalhao* &c., might be literal translations of the Dutch term *Stokvisch*, and Holland, having first exported the article, might have re-imported its Romanized name. I beg to refer the question to professional linguists. Such dictionaries as I have at command do not show any close relation between the Spanish, Italian, and Portuguese words, for a cod-fish and a stick.

† *Res. Holl.* 1589, p. 14, 836, 840.

all the North Sea, was perhaps the one most exposed to every naval foe, orders for ships to convoy the "Doggers" are numerous throughout the Republic's history. There is, however, another circumstance to account for the extraordinary liberality with which they had convoy doled out to them, viz. the fact that fishery on the Dogger bank took place at a season when both herring and whale fishery stood still ; whence it was possible for Holland, on Jan. 30th, 1597, to order the Admiralty Board of Rotterdam to send out *the whole* of their available vessels for the "Doggervaarders" convoy.

In spite of Government protection, cod-fishery seems to have been subject to severe losses by war, for a contract for their mutual insurance against damage by sea or foemen was passed in 1622 between the shipowners of the towns on the Maas concerned in the business, and ratified by the States of Holland in 1623, under their charter or "octroy." I have not found any positive information as to the contents of this document, which appears somehow to have been prejudicial to the steersmen's real or presumed private interest. The latter in the autumn of 1623 twice interfered with the publication of the Octroy (which took place, as usual, by cry, and by the posting of handbills), and got up a serious riot at Maassluis, whither soldiers had to be sent in order to maintain the peace. The matter was even of sufficient importance for a deputation from the Court of Holland to be sent to Maassluis with instructions to pacify the mutinous seamen, and the men of the law effected this object by putting a new interpretation upon the charter, in virtue of which "the pennies of the second word were to be left among the steersmen to the end of the fishing season, and then to be restored to the partners, if no damage had

been incurred." * The true sense of these words can only be found out by detailed investigation ; but even though not quite understood they make it evident that the terms between shipowners and skippers in the cod-fishery were then commonly regulated by some intricate contract, full of antiquated words of doubtful meaning, such as are still in use in the Dutch sea-fisheries, and are frequently the cause of protracted, and by the nature of the men concerned, violent disputes between employers and employed.

The Dunkirkers in the next years did not spare the cod fishery any more than the other branches. Cod fishers accordingly used to sail in squadron to the Dogger bank, under cover of two or more men-of-war supplied by Government, which convoy having been destroyed by seven Dunkirk privateers in April 1628, the whole fleet of the "small-fishery," reported to have, at the moment, been 180 vessels strong, retreated into port before the end of the season.† Three years afterwards, six men-of-war were allowed to "*de groote Abberdaan visscherije op de Maase*," at the request of their Committee of Shipowners and Steersmen.‡ These words of "great salt cod-fishery" were commonly used to designate the Iceland business, which accordingly must have had some organization, and a representative board, early in the seventeenth century. The mutual insurance contract just now mentioned may have been the beginning of a farther organization of the trade. An association called "*de Schelvis visscherije*" of Maassluis is mentioned as having in 1636 applied for

* "De Penningen van het tweede woord gelaten zouden worden onder de stuurlieden tot het einde der teelt, en dan te restitueren aan de Vennots, indien geen schade en viele." Cf. *Res. Holl.* 1622, p. 751 ; 1623 p. 94, 206, 214.

† *Res. Holl.* 1628, p. 444.

‡ *Ibid.* 1631, p. 171.

convoy by the organ of its commissioners,* and as Maassluis (then not yet a "herring town") was likewise the seat of the above-mentioned board, both names are perhaps indicative of one corporation. At any rate, the body representative of the several cod-fisheries was, like the Herring College, invested with more extensive powers in the course of time. In July 1678, during the protracted negotiations with France at Nijmegen, we find them engaged in negotiations with the States of Holland to obtain French passports; and when these were not obtained fast enough by diplomatic correspondence, the Committee offered to apply for the documents themselves.† On Sept. 5th, 1695, the treasurer and commissioners of the fishery at Maassluis were empowered by the States of Holland to levy, collect, or farm a tax of one penny per barrel of salt fish, including several kinds of cod-fish, plaice, and in general "everything that is salted between two bottoms," cured-herring of course excepted, which never was called "fish" in any publication of the period, and was moreover already subject to last-money under the herring laws. The contribution was to be due upon the fish being unshipped at Maassluis, and so bore the character of a local staple-duty. Annex to it, the Commissioners were entitled to levy the 40th penny on all fresh fish brought to market at Maassluis, whether alive or dead, and moreover to collect "ship-money" to the amount of fl. 12, upon each herring buss, and fl. 8 upon each hooker sailing either for herring or to Iceland. The privilege was granted anew for twelve years on Dec. 17th, 1706.‡ I should incline to conclude from these facts,

* *Res. Holl.* 1636, p. 394, 413.

† *Ibid.* July 8, 1678.

‡ *Gr. Plb.* v. p. 730.

that herring-fishery first began to develop at Maassluis towards the end of the seventeenth century, and that it was from the beginning under the superintendence of the same corporation who represented the cod-fishery. If the Commissioners here alluded to had been the delegates of one fishery only, the States would never have allowed them to levy a tax upon the other. A similar unity of interests and business probably existed in the other towns where both herring and cod-fishery were exercised.

These very scanty and incoherent indications are indeed quite insufficient to establish a notion as to the importance of Dutch cod-fishery in the seventeenth century. Besides the convoy usually granted them by the States, some testimony to the extension of the trade may be found in the fact that their salt or dried produce was constantly exported on a considerable scale. In 1657 a dispute arose about four Dutch vessels laden with "baccalauw" which had arrived at Cadiz, but were declined admission by the Spanish authorities on the plea that their papers were insufficient;* and it is apparent from the terms in which the matter was reported upon that Spain was a market of importance for Dutch salt cod-fish. So were many other Catholic countries, whose fast-day requirements were in part supplied by Dutch fish. The Catholic provinces now forming the Kingdom of Belgium were, in this respect, of particular importance, for their situation allowed Dutch haddock and cod, as well as plaice, sole, &c., to be imported there fresh, as a Friday delicacy; whence the protective measures applied to the Flemish fisheries by their Austrian Government, in the shape of elevated custom-house duties upon foreign fish, were particularly prejudicial to the Dutch Cod-fishery

* *Res. Holl.* 1657, p. 180.

and fresh fish business. Extensive correspondence was carried on between the Dutch Ambassadors at Brussels and their principals at the Hague, in the earlier years of the 18th century, on the subject of duties on salt-cod, and fresh fish of several descriptions ; but all efforts to obtain the removal of these duties were in vain, and the decay of the Iceland cod-fishery in Holland appears to have taken its origin from protective duties in the Austrian Netherlands and France. Difficulties with Denmark, the nature of which I shall expose in another chapter,* were also particularly prejudicial to the Iceland cod-fishery in 1740 and the next years ; and the first Dutch vessels confiscated by Denmark were not whalers, but cod-hookers from the Maas.

The actual effect of the differences with Denmark upon the Iceland cod-fishery cannot be traced, as no statistics of the trade are extant earlier than 1751, from which year they have been annually noted down in the '*Nederlandsche Jaarboeken*," and collected into a table by the Committee on Sea-fisheries, 1854, from whose Report Appendix C to these pages has been derived. The striking ups and downs of the trade, as shown by this table, may frequently be accounted for by vessels being transferred from the herring fishery to the Iceland business, and *vice versa*, as the state of the cured-herring and cod markets made such shiftings desirable. I should be at a loss, for instance, to find another reason why the number of vessels sailed to Iceland was 95 in 1756, and 111 in the next year, although the fishing returns of the former were miserable. A knowledge of fish-prices throughout the Republic's existence would be necessary to acquire a full understanding of this, as of other phenomena in the fisheries' history ; and

* See Chapter v.

as statistics, if kept at all, were at the time incomplete and unwarranted, to obtain such a knowledge would alone be the work of years.

Besides "hookers" transferable from one business to another, there were under the Republic vessels fit for no other service than the capture of fresh fish, cod and haddock especially, and provided with wells to keep the fish alive. Such well-boats must have been in use from early times downward ; for without them it would scarcely have been feasible to carry fish caught on the Dogger bank to the Friday-markets of the Catholic provinces unsalted. No mention, however, is made of well-boats till 1777, when, one Jongeneel of Rotterdam having built such a vessel to meet a foreign order, a petition to prohibit its exportation was preferred to the States of Holland by the Commissioners of the Cod-fishery of Vlaardingen and Maassluis. The States instantly appointed Rotterdam to take provisional steps to baulk the said Jongeneel's purpose ; but as in point of fact there was no law against it, they at the same time applied to the States-General for a special prohibition to export well-boats (*vishoekers met bunnēn*), which was accordingly enacted on January 5th, 1778, notwithstanding Jongeneel's remonstrances, who by reason of the depression then prevailing in the trade could hope for no chance of selling his vessel at home. The Placard of January 5th, 1778, contains prohibitions for the Republic's subjects not only to sell or hire vessels of the above description out to foreigners, or build them upon orders from abroad, but also to take service on foreign wharves towards the building of such vessels, or put wells into foreign vessels while staying in Dutch ports. All steersmen in the cod-fishery are, moreover, enjoined by

this Act to take oath to observe the new law.* From these several enactments it may perhaps be assumed that the Dutch had then a reputation as well-boat builders abroad. It would not be safe, however, to give this law the credit of the considerable increase in the Dutch cod-fishery in 1779 (see Appendix C); for the latter fact is amply accounted for by the very favourable fishing returns of the two preceding years.

The "embargo" laid upon all Dutch shipping by the States in January 1781 brought cod-fishery to a full stop as well as its sister-trades; and several requests of the Commissioners of the Cod-fishery of Vlaardingen and Maassluis, to have their trade permitted in the North Sea and off Iceland, were declined in the course of that year and the next. The scarcity of fish resulting from this "embargo" took effect upon the cod-fish as well as upon the herring market. While, as shown in a former chapter, herring was now actually imported into the Republic, certain dealers in salt cod-fish applied for leave to import that article and re-pack and re-export it; which permission, however, was strongly opposed by the Commissioners of Maassluis. It would appear from these proceedings that some particular fashion of packing and arranging cod was then in use in Holland, and Dutch salt-fish and stock-fish were in some way distinguished from foreign produce of a similar nature. The request having been declined, the Commissioners in 1781 obtained from the States-General a permission to sail, by way of experiment.† It does not appear that the experiment was attended with any success; for several shipowners preferred to sell their vessels abroad.

* *Res. Holl.* 1777, pp. 1229, 1414, 1443; *Res. St. Gen. Ibid.* p. 866. *Gr. Pl. Boek*, ix. p. 1309.

† *Res. St. Gen.* 1781, pp. 1054, 1182.

As this, however, was contrary to the law of 1778, it was necessary to obtain the States-General's permission for it, who accordingly, upon the request of the Commissioners of Maassluis, empowered the Admiralty of the Maas to allow vessels to be sold out of the Dutch cod-fishery to foreigners, under the sole condition that they should be bought back at the end of the war. The condition probably was not very faithfully observed; for 63 hookers sailed in 1780, and only 49 in 1784. The next years were very unfavourable, and the trade had come to nought in 1787, when only two vessels are stated to have been employed in it. The bounty system was then applied to the Iceland as well as to the other fisheries. The Commissioners of Maassluis applied for a premium in June 1788, and were by Resolution of April 9th, 1789,* allowed fl. 500 per hooker, being the same sum promised to the herring busses the year before. But premiums failed in the cod-fishery, even more utterly than they had failed in other branches. Not one hooker sailed to Iceland in the next years; and the cod-fishery had virtually come to a close before the final overthrow of the Republic.

CHAPTER IV.

COAST FISHING.

In using this title, which is a common denomination of several distinct branches of the Dutch sea-fisheries, a previous elucidation is necessary to prevent misunderstandings. "Coast-fishery" is thus named because carried on, not *off* or *under* the Dutch coast exclusively, but *from* that coast; i.e. by flat-bottomed vessels owned there.

* *Groot Placactb. C.* vol. ix. p. 1314.

These vessels until recent years have been principally employed in two distinct trades, viz., catching herring to be smoked, and catching fish to be sold fresh, cod and haddock included. The former fishery was generally exercised off Yarmouth, in the so-called "Deepwater," and the latter all over the North Sea, on the Dogger bank especially. The name of "*neeringhe van den Versche*," or "trade of the fresh," is generally applied to the latter fishery only, although herring salted preparatory to smoking is frequently, though improperly, styled "*fresh herring*." Both the trades now alluded to were under the Republic exercised only in flat and square smacks called *pinken* or *bomschuiten* (bum-boats) the model of which can have undergone no considerable variations, as they were and are bound from villages having no ports, and therefore must be built so as to bear going ashore and remaining on dry land at low tide, without prejudice to their soundness. The Zuider Zee fisheries, which have a history of their own, may also be comprised under the general term of coast fishery. This chapter will therefore treat of three subjects essentially different, viz., the fisheries for smoke-herring and fresh fish in the North Sea, and Zuiderzee fishery.

Bum-boats were, in the Republican period, owned at the North Sea coast villages of ter Heide, Scheveningen, Katwijk, Noordwijk, Zandvoort, Wijk op Zee, and Egmond. Vessels of the kind never went as far north as the coast of Scotland in those times, and consequently had no share in the earlier herring fishery. They went for herring only to "Deepwater," off Yarmouth, in autumn and in the latter weeks of summer; and although herring caught then and there was successfully cured in keeled vessels, *and bum-boat fisheries were at first not prohibited from curing it likewise*, they have long abstained from the practice, probably on

account of the small size of their vessels. Herring caught in bum-boats was summarily salted, or strewn with salt, on board, and carried home in baskets to be smoked in the coast villages, and sold as "bucking." The salting process destined to preserve such herring until brought to the smokeries was, and is now, called *steuren*; whence smoke-herring is generally styled *steurharing*.

"Bucking," although an article of extensive home consumption, never fetched anything like the prices of cured herring; but smoke-herring fishermen found a compensation for this inferiority in the nearly complete liberty of their business. They were at liberty to carry their fish abroad, and it appears from an entry in v. d. Lely's *Recueil* (p. 13) that they used, "from early times downward," to sell "fresh" herring at Yarmouth. As their produce never was held to be of a particularly fine quality, they were of course not subject to any of the laws on packing and branding. They were, indeed, subject to the St. John's rule; for by the Placard of 1607, quoted in Chapter I,* it was prohibited, in the most general terms, to wet any nets fit to catch herring before St. John's in midsummer, and the only exception to the rule was in favour of the cod-fishers, who were allowed at any time to catch unripe herring as bait for their hooks. Fishing steersmen from the coast were moreover obliged annually to take out a licence from the College of the Grand Fishery, which was only delivered upon their taking oath not to use foreign nets or buy herring from others at sea. As this obligation is first mentioned in the Herring Act of 1656,† it is probable that they sailed without a licence before, and were not brought under the College's rule till the said year. But

* *Gr. Plb.*, i. p. 733.

† *Ibid.* viii. p. 1242, art. 3.

the College's yoke was easy upon them so long as they abstained from curing herring, and therefore were not competitors of the Grand Fishery. In 1663, according to v. d. Lely, they were "suspected" of curing herring; whence, in the said year, the college inserted a clause against such curing into the oath to be taken by steersmen from the coast previous to receiving their licence. The proceeding was clearly an encroachment, as the law did not prohibit the coast fishermen from curing their herring. But it has been shown in Chapter I. that the College did not usually shrink from extending the law to their competitors' prejudice. In this instance they actually conferred on themselves a very important monopoly, which was afterwards the object of much controversy and one of the main features of herring legislation; but which, when first claimed, *was not based on any law.*

It appears that this monopoly was not always observed to the letter. In 1735 and 1736, coast fishermen from Katwijk were found to cure herring caught by them in the Deepwater, on the plea that a very warm season made it impossible for them to preserve their herring uncured till they should have reached the coast and brought the fish to the smokery. The proceeding, as they argued, was for the benefit of the smoked-herring industry; for if they had not cured the earlier part of their catch they would have been obliged to smoke it some time after capture, whereas no herring above two days old was now carried to the smoke-house, and Dutch "deepwater" bucking thereby maintained its excellence over the Yarmouth bloater.* But the grand Fishery would not hear of admitting competitors into the cured-herring business upon a plea based on the smoked-herring interest; and once more prohibited the coast

* *Ned. Jaarboeken*, 1751, p. 1043, sqq.

fishermen to cure, which prohibition their competency to grant or refuse licences to all herring fishermen enabled them to enforce.

The prohibition appears to have been generally observed till 1751, in which year the Stadtholder Prince William IV. paid a visit to the coast village of Katwijk, and the fishermen of the locality availed themselves of the occasion to petition His Highness for re-instalment in their ancient right to cure herring. The Grand Fishery's self-made curing monopoly being thus menaced, petitions in a contrary sense were immediately sent in from some of the towns concerned in the cured-herring business, and a controversy ensued, of which a full account is to be found in the periodical called '*Nederlandsche Jaarboeken*.*' The College of the Grand Fishery, before whom the petition from Katwijk was laid, of course advised against it; and although the coast fishermen (or *parlevinkers* as they are called in a contemporaneous Act of the States of Holland)† presented another memorial to the Princess Governess‡ after the Stadtholder's demise, the question at issue was ultimately decided against them, and the College rule maintained.

The logic in this dispute was all on the side of the coast fishermen, and their opponents indeed contradicted their own arguments by using too many. First, said they of the Grand Fishery, the herring caught in bum-boats is of inferior quality and unfit to be cured. Secondly, fishing boats from the coast are equipped at less risk and expense than herring busses, and the former's owners are already

* *Ned. Jaarboeken*, 1751, p. 1043, 1181; 1752, p. 481.

† *Res. Holl.* 1751, p. 318.

‡ Princess Anne, as guardian of her son William V., then three years old.

privileged, inasmuch as they are allowed to sell herring at sea and abroad ; and it would be the Grand Fishery's ruin to expose them to competition on such unequal terms as these. Thirdly, the smoked-herring business will be upset if coast fishermen take to curing, and English "bucking" will gradually supersede the Dutch. To the first of these arguments it was objected that there could scarcely be any difference in quality between the herring caught by either party, as busses and bum-boats, or "pinkens" fished side by side, in the same sea and season. Besides, if the herring caught by the latter were unfit for curage, how could the Grand Fishery fear their competition, or the extinction of the smoked-herring business? The argument based upon the Grand Fishery's greater risks and charges was met by the query "whether it was more expedient for the country's interest that much should be risked for little gain, or that considerable profit should be made with little or no exposure?" As for the liberty to sell herring abroad, any coast fishermen would of course have had to give up that privilege if he had taken to curing. As a last and conclusive argument, the petitioners from the coast showed that the Grand Fishery, in prohibiting them from curing herring, acted as judges in their own case. So they undoubtedly did ; but their judgment does not appear to have been further appealed from at the time, and their monopoly of curing remained in force long after the end of the Republic.

The coast fishery might indeed have proved serious competitors to the Grand Fishery if they had been given a chance. It is stated that in 1751 one hundred and twenty boats sailed from Scheveningen alone* and the whole number of busses in that year was not quite double the figure. The smoked-herring business appears in the next

* *Europische Mercurius*, 1754, vol. i. p. 62.

years to have declined rapidly, chiefly on account of measures taken to prevent the importation of Dutch fish into the Austrian Netherlands, of which the fresh and smoked fish concerns were equally the victims. In 1777, the Grand Fishery having obtained a premium two years before, the owners of herring boats of Katwijk and Noordwijk in their turn petitioned the States of Holland for "such a bounty (*douceur*) as it shall please their Noble and Grand Mightinesses to grant" and they likewise sued for a prohibition to the busses to bring home uncured herring,* whence it may be inferred that they of the Grand Fishery, although anxious enough to shelter their own trade from competition by those of the coast, did not disdain occasionally to meddle with theirs. No resolution was taken as to the latter part of the petition, and the former was at the time declined. The application for bounties was renewed in November 1786,† and kept under consideration for more than a year. A premium of fl. 200 was awarded, on April 17th, 1788,‡ to the owners or managers of all such herring boats equipped in any of the villages on the North Sea coast as shall be used in the fishery, for "salt-herring or bucking" between Elevation day, or Sept. medio, and Dec. medio, "or thereabouts." The premium was granted for three years only, but the grant was renewed in 1791 and 1794. The fact of the coast fishermen being still

* *Steur-en Korf-haring*. Such herring was kept in baskets (korven) and strewed with salt (steuren) till brought home to be smoked, whence fish thus treated was called either *steurharing* or *korfharing*. The name of *zoutharing* (salt herring) is also occasionally applied to it, but this "salt herring" should be carefully distinguished from "cured herring." See *Res. Holl.* 1777, p. 928, and 1778, p. 880.

† *Res. Holl.* 1786, p. 4413.

‡ *Gr. Pl. Boek*, ix. p. 1314.

at the time under obligation to take licences from the College of the Grand Fishery is evident from a clause of this Resolution, by which the said College is ordered to yearly state the number of boats sailed from the coast under their supervision.

The differences about the right to cure herring are, as has been shown, the main subject of the smoked-herring trade's history under the Republic. A very different point of working legislation has been contested between those concerned in the "fresh-fishery;" viz., the nature of the nets to be used by them.

It would appear to be still a point at issue between technical writers on sea-fishery, *whether the sea can be exhausted*. Whatever views may at present prevail upon this question among experts, the provincial legislators of Holland under the Dutch Republic held it possible to extinguish fish-life under their shores; and they accordingly at one time took steps to prevent its destruction by enacting penalties against the use of such nets as either sweep the bottom of the sea, and thereby are said to extirpate spawn and fry of certain fish residing on the ground, or destroy fry of fish by their undersized meshes.

Fresh-fishery of the North Sea coast, commonly called "the side" in former times, appears at an early period to have been of some importance, as a Resolution of the States of Holland dated December 7th, 1585,* proves that fresh fish from Scheveningen was at the time sold in the London market. Still the profits of the trade were small, and fishermen "of the fresh" are throughout the Republic's time styled "the poor, or miserable (*schamele*) fishers of the side." In 1595 they were allowed, on account of their

* *Res. Holl.* 1585, p. 808.

poverty, to fish on public prayer-days, "provided it should be done with good discretion."* Measures for their safety were frequently taken by the States of Holland, and they had generally one or two small ships of war for their special protection in time of war. Agreements to leave each other's coast fishery unmolested were concluded with Dunkirk, or their conclusion proposed, in 1606, 1644, 1674, 1703, and 1707; but as to the effect of these measures I have not found any evidence. The circumstance of Dutch coast fishery being mostly exercised at a short distance from shore, and by flat and shallow boats, liable to be stranded whenever a foe came in sight, may have induced the Dunkirkers to show forbearance to prey so apt to escape them, when the reciprocal safety of their coast fishery from Dutch privateers and men-of-war was to be gained by it. For the same reason "fresh-fishery" was sometimes permitted when the other sea-fisheries were prohibited on account of the wars.†

Measures to prevent the exhaustion of the coast waters are not on record before the year 1676, when at the request of the coast fishermen themselves, viz., those of *ter Heide*, *Scheveningen*, *Katwijk*, *Noordwijk*, *Zantvoort*, *Wijk op Zee* and *Egmond*, a Placard of the States of Holland, dated September 10th,‡ prohibited all such proceedings as were reputed obnoxious to the preservation of certain species of fish. "It has always been customary," says this Act, "that nobody should fish with narrower gear than plaice nets, being drift nets made upon a chip of the size of a full eight-and-twenty" (whatever that measure may have been). "Some time before this, however, certain gain-seek-

* *Res. Holl.* 1595, p. 531, 586.

† *Ibid.* 1666, p. 49, 621; 1667, p. 101, and others.

‡ *Ibid.* 1676, p. 385; *Gr. Pl. B.*, iii. p. 1366.

ing persons have begun to fish with nets composed of narrower meshes, and even with trawl-nets (*schrobnetten*)"; and as by the former proceeding fry of fish are killed, while the latter destroys the spawn, and even the bait on which fish live, both are prohibited by the placard just quoted. An exception to this law was made on January 22nd, 1677,* in favour of those who should fish for shrimps within the sand-bars, with a light ground-net (*ligte sayingh of corde*). Bars of movable sand do indeed exist to this day close under the whole of the North Sea coast. "Sayingh" (now spelt *saayem*), is the name still used for the shrimp-net, which is indeed a kind of trawl. The sense of the word *corde* is explained in the first legislative act in which the implement is mentioned, viz., a placard dated April 19th, 1583,† by which it is forbidden to fish with this net in the river estuaries, and in which it is described as a net kept open by a beam and burdened with stones or lead, which is dragged along the bottom of the water behind a fishing vessel. "Corde," in short, is an equivalent for the now common word "schrobnet," and a general term for any trawling apparatus.

The permission to use the shrimp trawl was not the only mitigation grafted in 1677 upon the law of the preceding year. It was likewise permitted to use "sole-nets" (*tongewant*) the meshes of which measured "a two-and-thirty" being apparently a smaller dimension than the "eight-and-twenty" adopted as a minimum size in 1676.‡ But the use of all trawl-nets other than the

* *Gr. Pl. Boek*, iii. p. 1367.

† *Ibid.* i. p. 1274.

‡ It appears from these denominations that the dimensions of the meshes were indicated by the number of them which went to some standard measure. And it may therefore be supposed, although 1

"sayingh," just mentioned was again prohibited in 1677, and a special clause was enacted against the sinking even of lawful "eight-and-twenty" nets by ballasting them with weights whereby they might be used as trawls.

The prohibition against trawling, although enacted at the fishermen's own request, was very ill observed. On March 29th, 1678, the States of Holland instructed their officers to strictly execute the law against all those who should fish with trawls (*corden of schrobnetten*); but nevertheless in the summer of that year the delegates from Haarlem to the States reported about grievous disturbances occasioned by trawlers at Wijk op Zee. Among the fishermen of this village one party stuck to trawling and therefore went by the name of "schrobbers," while another observed the law and were styled "scholders," by reason of their adhering to the lawful "scholnet," or plaice net. The trawlers acted upon a principle frequently followed by trespassers of every kind; they annoyed those who kept within the law by carving and destroying their gear, and occasionally laying violent hands upon their persons; and the local magistrates, stated to be "friends of the trawlers," made matters still worse by sequestering the "scholders'" nets under a pretence of their being sized contrary to the statute, and keeping them under arrest so long as to occasion their owners a serious prejudice, although the nets had to be ultimately released, being found in accordance with the law.* Fishermen of

have found no positive evidence to the fact, that the "eight-and-twenty" size here alluded to was the same which was in 1683 declared lawful for seines used in the Zuider Zee, viz. fourteen to half a yard. In the first quarter of the present century, the "eight-and-twenty" measure was three Netherland inches and nine-tenths (see the Laws of 1820 and 1825, in Part iii. of this essay).

* *Res. Holl.* 1678, p. 391.

other coast villages were not much better observers of the statute, and the placards of 1676 and 1677 had to be re-issued several times in 1679 and following years. On March 16th, 1680, a petition by the Side fishermen, to be allowed the use of "*cordens*" or trawls either of the twenty-eight or thirty-two size was declined by the States, and a strict application of the laws against such fishing once more recommended to all officers concerned.* On September 17th, 1687, the placard was once more renewed,† and the penalties extended to any in whose boats forbidden nets should have been found, even though they should not have sailed with them. But even this did not put a stop to the coast fishers' habit of trawling, and the prohibition had ultimately to be given up, chiefly because of the impossibility of enforcing it. In March 1689, the "*Corders*," of Wijk op Zee represented to the States that trawling went on in the other villages in spite of the law, as it was not possible to procure fresh fish by any other process during war time, when fishermen "of the Fresh," were obliged to keep within view of the coast. Whereupon the States ordered their officers on the coast to stop the execution of the laws against trawling,‡ and there is no evidence of their having been renewed under the Republic.

It is stated in some of the above-quoted laws against trawling, that at the time the fresh fishery "was already ruined for the greater part." Nothing precise is known as to its extent in still earlier times; but its decline certainly did not stop at the end of the seventeenth century. The Catholic provinces of the Austrian Netherlands were one of the principal markets for fresh fish from the Side, which

* *Gr. Plac. Boek*, iii. 1368.

† *Ibid.* iv. p. 1363.

‡ *Res. Holl.* 1689, p. 230; *Gr. Pl. B.* iv. 1365.

of course could never be carried far inland in those days of slow locomotion ; and accordingly, when protective duties against foreign fish were resorted to in the Austrian provinces about 1725, the Dutch "*neeringe van den versche*" were the principal sufferers. Remonstrances against the Austrian tariffs were tried several times, but found unavailing ; and although under the Republic statistical accounts of the fresh fishery do not appear to have been kept, the gradual closing of the Southern market may be safely assumed to have occasioned its lasting decline in the course of the eighteenth century. The "embargo" of 1781 of course contributed to hasten the downward movement ; and when the sea was reopened in 1783, only ten bum-boats or "*pinken*" are stated to have sailed from Scheveningen for fresh fish. The trade's utter insignificance towards the end of the Republic may also be deduced from the fact that, of all the several branches of North Sea fishery, it is the only one which never was encouraged by a bounty. The phenomenon might indeed be accounted for by a very flourishing state of the Fresh trade in the year 1788, when premiums were lavishly dispensed to all other fisheries, and all of them were in a prostrate condition. But if the "*verschvaart*" had made such a favourable exception, there is not a doubt but the fact would have been mentioned on all hands ; whereas the history of this trade is simply a blank at the period when sea-fisheries in general were distinguished by an ardent competition for bounties. Fresh fishery from the "side" might even be believed to have come to a complete stand-still at the close of the republican period, if some mention of it were not made a few years later, as will be shown in another part of this work.

The fisheries of the Zuider Zee have, as has been said

above, a history of their own, and one widely different from that of the several trades of which the North Sea is the area. As the Zuider Zee is an inlet, separated from the North Sea by a boundary of isles and shallows, no enemies used to disturb its fishermen, and the Republic's many wars never affected them. As regards the nature of their trade and of the gear and vessels used, they were entirely at variance with their brethren of the open sea. The most striking point of resemblance between the fisheries in the two waters is perhaps the jealousy respecting them between the inhabitants of the surrounding land. In the case of the North Sea, this jealousy raged between nations ; in that of the Zuider Zee, between inhabitants of the Republic's several provinces. In both cases it led to repeated conflicts, accords, and treaties. While reading the Zuider Zee history, of which, as it can be of no very stringent interest to the foreign reader, I shall give but a very succinct account, it should be borne in mind that the shore of this inland sea belongs to several provinces, which under the Republic were distinct States, having sovereignty rights of their own, and in this case anxious to use them so as to ensure the greatest possible part of the Zuider Zee fishing returns for their own subjects. Something like the "Dominium Maris" question, on a reduced scale, is at the bottom of the history of Zuider Zee fishery under the Republic of the United Provinces, the gaps of whose union were peculiarly apparent in this very matter.

Salmon and sturgeon appear in old times to have been abundant along the Zuider Zee shore and about the mouths of the rivers descending into it ; * where, however, they have

* Several towns on the Zuider Zee still carry salmon in their scutcheons. A present of salmon from one of them to Duke Albert of Bavaria is recorded as early as 1389.

been now for a long time extinct, or very nearly so. Flounder and turbot were always, as they are to this day, prominent among the produce of the Zuider Zee, and gave their name to the vessels most in use there (*botters*, from *bot*, i.e., flounder). Herring fishery was also exercised in the said water from time immemorial ; but Zuider Zee herring never was branded, nor its fishery subjected to working rules, whereas the main object of legislation on Zuider Zee fisheries has for centuries been to prevent the destruction of salmon, sturgeon, and flounder, by regulations as to the width of the nets to be used. This object was pursued some time before the Republic was born. On January 8th, 1546, the Emperor Charles the Fifth, by a publication, fixed the minimum size of the meshes, at "five common seamen's thumbs." The towns of Holland, whose fishermen had from early times used to fish in the Zuider Zee with narrow nets, obtained the repeal of this edict on November 12th, 1547, when there was substituted for it a prohibition against dragging nets through the water, by which proceeding, according to the said law, fish are smothered ere they be full grown. It was likewise forbidden by this edict to land smothered unripe fish and sell them as food for cattle or pigs ; and all fish not quite full-grown were prescribed to be thrown overboard as soon as caught. Fishermen from Holland continued to assert their rights to unlimited fishery in spite of the law, whereas those of Gelderland and Overijssel insisted on its observation, and moreover claimed for themselves the exclusive right to fish within a certain distance from their shore ; and both subjects became a matter of protracted disputes between the several provinces.* A provisional edict of the year 1555, fixed the minimum width of the nets to be

* A paper on the subject has been contributed to Nyhoff's *Bydragen voor Vaderl. Geschiedenis en Oudheidkunde*, 1864, p. 309.

used at two common seamen's thumbs, and some limits were measured out in the next year, within which fishermen from Holland should not be allowed to approach the Gelderland and Overysseel shores. But they of Holland continued to overstep both boundaries of lawful fishing, and their fishing vessels of a peculiar description call "*waterschepen*,"* in which they used to carry arms and ammunition, and commit acts of violence and piracy upon the fishers of the other provinces, were the terror of the Zuider Zee. Nor did they amend their conduct when a sentence, or arrest, by the Grand Council of Malines, dated April 29th, 1559, definitively determined both the fishery limits of each province, and the minimum width of the nets to be used.

The Union of Utrecht by no means put an end to the protracted disputes and petty warfare between fishermen from the several provinces which acceded to it. Reciprocal complaints about fishing with unlawful nets, and within the established limits, were frequently laid before the States of those provinces. Gelderland and Overysseel having been occupied by the enemy in 1672, it was seriously considered in the States of Holland to exact from them, as a condition for their re-admission into the Union, a promise never to trouble Holland fishermen in the unrestricted fishery in the Zuider Zee in future.† The disputes ran so high in the next years, that Holland and Gelderland imprisoned several of each other's fishermen for unlawful fishing, and a conven-

* I have not been able to ascertain to what peculiarity these vessels, of which no mention is made in after years, owe their rather singular name of "water ships." None of the authors nor any of the laws upon the subject explain their nature. I suppose them to have been well-boats.

† *Secret Res. Holl.* February 65, March 24, 1674.

tion was at last agreed to between delegates from both provinces, on December 17th, 1682, in virtue of which the men detained were released on either side, and a set of rules for Zuider Zee fishery was established on March 21st, 1683, to be enforced as a law in both provinces.*

The principal contents of this regulation were as follows :—

No silken nets whatever to be used, and the nets of yarn not to be of a less depth than three feet measured between the floats at the top and the lead used to steady them ; the nets' meshes not to be narrower than twelve to the yard.†

All setting of nets (a practice very common especially along the Zuider Zee shores, by reason of their extreme shallowness), to be prohibited in the first three months of the year ; and all set nets to be placed seaward perpendicular to the shore line, and not parallel to the shore, and their ends marked by poles driven into the bottom, for sailing vessels to avoid damaging them ; the maximum length of these nets to be two hundred fathoms.

Fishers using either set nets of the above description, or fykes and weirs, to keep a convenient berth and not place their contrivances closer to each other than at intervals of one hundred fathoms at the least.

All fish caught unripe and unfit for consumption to be thrown overboard, whether dead or alive, and on no pretence carried ashore and sold, bartered or otherwise turned to account as food for pigs, ducks, or other animals.

The use of seines (*segens*) to be prohibited in the months of April and May, and the meshes of such nets at all times to be of the size of fourteen to half a yard.

This regulation by treaty, issued as a law for Hollands fishermen by the States of Holland on April 10th, 1683, by

* *Gr. Plac. Boek* iv. p. 1358–9.

† “*dan van twaelf overgangen in een elle.*”

no means set the fishermen's minds at rest. On September 24th of the same year the prohibition to use silken nets was repealed as regarded set-nets fixed to poles, and used on the coasts of Holland only,* at the urgent request of the fishermen of Monnickendam and some neighbouring localities. Petitions to be allowed to fish with narrower nets than the sizes prescribed were examined by the States in 1685,† and Holland took upon herself to supersede till June 1st, 1688, the enforcement of the general prohibition against nets narrower than twelve meshes to the yard.‡ In 1698, conditions of a similar nature of those of 1683 were agreed between Holland and Overijssel; and it is recorded that on January 21st, 1699, forty fishermen from Amsterdam, being ready to sail on the Zuider Zee in "water ships" were sworn by the Burgomasters of their city to observe the above regulations. In the next year, however, the State of Overijssel remonstrated with those of Holland about unlawful fishing by Hollands subjects,§ and in 1707, Holland in her turn complained of violence committed upon fishermen from Hoorn, by others from Vollenhoven in Overijssel. In 1728, Friesland, having likewise an interest in the Zuider Zee fishery, remonstrated with Holland about inhabitants of the latter province fishing for plaice before the fifteenth of April, against a law of Friesland which never was binding for Hollands subjects.|| Though only now and then mentioned in the States' registers, such disputes as these may be presumed to have occurred as long as the Republic existed;

* *Gr. Placc. Boek*, iv. 1361.

† *Res. Holl.* 1685, p. 88.

‡ *Ibid.* 1688, p. 265.

§ *Ibid.* 1700, p. 386.

|| *Ibid.* 1728, p. 430.

for it was impossible to prevent them so long as every one of the provinces surrounding the Zuider Zee was entitled to legislate on fishery on its own hand, and the statutes of one were not binding for the others, except in so far as they had been agreed upon by treaty, as in the case between Holland and Gelderland.

The last legislative act on record relating to Zuider Zee fishery other than for herring, was not conventional, but issued by Holland at the request of her own subjects. The set-net fishermen of Marken (a small island close under the Hollands shore) in 1785 petitioned the States for protection against destruction of their weirs, traps, &c., by nets dragged through the water at a reckless speed, either between two vessels or behind one.* The matter was considered with the slowness and pedantic verbosity habitual in the later years of the Republic, and ended in a prohibition dated December 15th, 1786, "against the most pernicious drag-fishery between two vessels (or *botters*) coupled together," and against drag-fishery at night, even if only one vessel were used. It was also prohibited by this Act, to tow a grapnel behind fishing vessels; and from the latter clause, as well as from the deliberations relative to the law, it appears that drag-fishery was sometimes carried on with a view not only to catch fish, but also to destroy the set-gear of concurrents.†

Herring fishery appears to have been in the Zuider Zee as ancient a trade as that of plaice and sturgeon; but very

* These nets, by the description given of them, are evidently the very narrow anchovy nets (*wonderkuil*) against the use of which measures have recently been taken (see Part iii., ch. iv.). I have not however, found any distinct mention made of anchovy fishery in Zuider Zee under the Republic.

† *Res. Holl.* 1785, p. 5119; 1786, p. 2406; *Gr. Plb.* ix. 1312.

little is known about the former, except that its produce, being herring of a small size and often lean (*yele haring*) was never cured, but either sold fresh as "*pan-herring*," or smoked, the latter being the more habitual method. The only legislative act relative to the Zuider Zee herring fishery is a placard of Holland dated May 31st, 1752,* by which the Zuider Zee fishermen of the province were enjoined to bring all their herring to market in one of the fortified towns of Holland and West Friesland, and not to sell, or otherwise transfer any herring at sea. The object of this enactment (which appears to have been but a renovation of old laws fallen into disuse) was to uphold the smoking establishments of Holland, and prevent herring caught by inhabitants of that province from being landed in one of the ports of Gelderland and Overysse. The law was mitigated by another dated May 9th, 1755,† by which it was declared lawful for two or three fishers to sail in company, and have their fish brought ashore by one of them; and they were moreover during the week preceding Easter dispensed from the prohibition to sell herring at sea. The former clause is indicative of something like "sale-hunting" on a scale reduced in proportion to the small distances between the ports and the fishing area. Zuider Zee vessels indeed did not lose much time in sailing home to their ports of Edam, Monnickendam, &c.; but their time was often peculiarly precious, as the Zuider Zee has at all times been subject to fitful invasions by herring shoals so dense as almost to fill up the sea. It is stated that in 1549 herrings were caught off Enkhuizen by simply scooping them out of the water

* *Gr. Plb.* viii., 1255.

† *Ibid* viii., 1259. An interpretation of this Act was issued in 1765, (*Gr. Pl. B.* ix., 1301).

in basketfuls, and that in 1665, some skippers of the same town landed eight hundred lasts, or eight millions of herrings in one month.*

CHAPTER V.

"DOMINIUM MARIS."

THE right to fish all over the open sea has always been to the Dutch Republic a matter of importance proportioned to that of her sea-fisheries. This right is now universally acknowledged to belong to all and sundry ; but notions on international law were different some centuries ago, when the Sovereignty of the seas, or of some portion of them, was claimed by more nations than one. The Netherlands never set up any such claim, and by the number of their merchant and fishing shipping were always very closely interested in debating it, and maintaining the "*Mare Liberum*," theory, the very name of which reminds of its immortal Dutch expositor and defender, Hugo Grotius. As all pretensions to "*Dominium Maris*," were of a nature in the very first place to affect the sea-fisheries' most vital interest, this history, or that period of it which coincides with the international debate on the question, would not be complete without a brief account of the several phases of the quarrel, as carried on between the Netherlands and their two rivals in fishery, Great Britain and Denmark. The disputes with the former power are by far the more important, and have been made the subject of a profound historical investigation by Mr. J. Muller, Fzn., in his important work '*Mare Clausum*.'† The compass of these pages of course affords

* See p. 20 of the Report by the Committee on Sea-fisheries, 1854.

† Edited by Fr. Muller, Amsterdam, 1872.

no space for any but a short survey of the question, and forbids entering upon its merits properly said, or treating its scientific side as a point of history and international law. The following is a very concise account of its actual bearings upon the Dutch sea-fisheries, i.e. of the effect taken upon them, at some periods, by such acts of foreign Governments as were based upon pretensions to a fishing monopoly in some portions of the sea.

It has been stated in Part I of this work, that as early as the year 1295, King Edward the First forbade his subjects to molest the Dutch, Zealanders and Frisons, while fishing off Yarmouth ; a fact peculiarly significant, as Edward the First was the first British monarch who styled himself sovereign of the sea. In 1439 a treaty concerning the rights of fishermen was agreed to between King Henry the Sixth and Isabel of Portugal as representing her husband, Philip Duke of Burgundy, then reigning Count of Holland. This treaty, stipulating that the fishermen of both parties should be free to "*paisiblement aler par tout sur Mer, pour Peschier et Gaignier leur vivre, sans Empeschement ou Destourber de l'une Partie ne de l'Aultre,*" originally covered only the natives of Brabant and Flanders on this side of the Channel. Having been renewed more than once, it was finally extended on the 24th of November, 1467, to the natives of "*toutz les aultres Pais et seigneuries,*" of the then reigning Duke of Burgundy, thereby including the Dutch and Zealand fishermen, and for the first time consecrating by international compact their right to fish all over the sea, "*sans qu'il leur soit Besoigne sur ceo requirer ne opteiner ascune Licence Congie ou Saufconducte.*" The treaty was again renewed at Lille, on July 12th, 1478, in the same terms as regards fisheries ; and was finally superseded by the "Grand Intercourse," or treaty concluded at London

on the 24th of February 1496, which likewise stipulated, in Latin bad but explicit, the entire freedom of fisheries on either side. "*Conventum, concordatum et conclusum est,*" says the document, "*quod Piscatores utriusque Partis Partium praedictarum (cujuscunque conditionis existant) poterunt ubique Tre, Navigare per Mare, secure Piscari absque aliquo Impedimento Licentia seu salvo Conductu.*" This treaty continued in force for more than a century and a half.

The protection of the Sovereigns of Scotland was from very early times no less valuable than that of England to the Dutch fishermen, who as far back as the earliest stage of their history appear to have worked the more northerly parts of the North Sea and the Scottish coasts. A privilege granted to them by the King of Scotland is mentioned in the year 1341; and a treaty concluded at Binche on February 19th, 1540, between the Emperor Charles the Fifth (then Sovereign of the Low Countries) and James the Fifth of Scotland, stipulates that the fishermen of both nations shall be reciprocally protected against pirates and indemnified for damage received in time of peace at the hands of subjects of either state.

The second treaty of Binche, dated December 15th, 1550, explicitly stated "*circa Piscationem ac liberum usum Maris, ea quae per Tractatum anno 1540 . . . inita conclusa ac conventa fuerint debite ac sincere observari debebunt.*" In virtue of this treaty, which was once more confirmed in 1594, and of the London treaty of 1496, the freedom and reciprocal protection of sea-fisheries was a settled point of international law between Great Britain and Holland, towards the close of the 16th century.

But at this period the Low Countries, hitherto an obscure province of a continental Empire, not only astonished the

world by their declaration of independence of the Spanish dominion (1581), but entered upon a career of matchless prosperity, in spite at first of the most disastrous circumstances. Even while involved in the long and destructive war, which long before its end brought about the avowal and consecration of their independence by their late sovereign, their unfettered energies, spurred by self-given freedom, were strenuously directed towards economical progress, and their fisheries began to increase rapidly. A new State had sprung up in Europe, and was at once counted with and envied. Such rivalry as had from times immemorial existed between the British and Dutch fishermen, grew with the young Republic, and from the very beginning of its existence took the shape of an animosity between it and the British Empire, which centred in long-rankling disputes about the freedom or dominion of the North Sea.

Robert Hitchcock's extremely curious plan for the organization of British fisheries, which appeared in 1580,* is the first document in which this rivalry is tacitly avowed. The author proposes British herring-boats to be rigged on the pattern of "Flemishe Busses" and the fish caught by them to be cured in the Flemish manner (*Beukelsz's*). The competition of the Dutch herring fleet, then evaluated by Selden at four or five hundred sails, was considered by

* A Pollitique Platt for the honour of the Prince, the great Profit of the Publique State, relief of the poore, preservation of the riche, reformation of the Roges and Idle persones, and the wealthe of thousandes that knowes not how to live. Written for a New Yeres gifte to Englande and the inhabitantes thereof." It appears that there is now *but one* copy extant of this pamphlet, preserved in the British Museum. The author of these pages quotes it from Mr. Muller, who in his above-quoted work, '*Mare Clausum*,' quotes it from extracts transmitted by a friend.

Hitchcock to be the chief obstacle to his plan, but he did not consider it insurmountable, the fishing area being situated "within the Queene's Majesties Seas" and much closer to the British than the Dutch coast, thereby putting the Dutch at a considerable disadvantage on the markets of England and Scotland. Sir Thomas Overbury's 'Observations in his Travels' (written 1609, printed 1626) likewise contain a warning against the Dutch, and represent them as being England's natural rivals on the sea.

Still, under Queen Elizabeth's reign Dutch fishermen were not molested. Measures tending to alienate so desirable an ally against Spain were inconsistent with the politics of this far-sighted monarch. Things took a very different turn soon after James the First's advent to the throne. Besides considering himself personally affronted by Grotius' treatise on *Mare Liberum*, the contents of which agreed very ill with the King's passion for his prerogative, His Majesty felt sorely aggrieved, and by no means without reason, by the manner in which the Dutch exercised and overstepped their fishing rights; not only ousting the English from the trade by lawful competition in overwhelming numbers, but occasionally offering them such violence as has for centuries been usual with such of the rival fishermen as chanced to be the stronger in a collision.* Fishery and piracy were then, as indeed they have been since, concerns closely connected together on all hands. English subjects were loud in complaining, and the result was the king's "Proclamation touching Fishing" (May 16th, 1609) by which in consideration of the injury done to English by foreign fishermen, and in virtue of the Royal prerogative, foreigners were prohibited from fishing on

* For instances of this see *Müller*, p. 47.

British coasts and in British seas, unless licensed thereto by the king's officers, upon payment of the duties incumbent on such license. . The great "Mare clausum" question was by this measure openly started.

It was at first discussed on amicable terms. The Dutch Ambassador, sent to London avowedly to thank the king for his good offices in the concluding of the twelve years' truce with Spain, had a debate upon the point against the king's counsel learned in the law, on the 16th of May, 1610. They based their remonstrance chiefly upon the liberties anciently granted to the Dutch, and upon their being the first in right to the herring fishery by reason of the best method of herring curage having been invented in the Netherlands, but were met by the assertion of the king's dominion over the seas, and would very probably have been unsuccessful had not the murder of Henry IV. of France suddenly turned the king's most earnest attention to the expedience of conciliatory proceedings towards all those in whom allies were to be found against Spain. Although fully maintaining his exclusive sovereignty in the British seas, the king consented to supersede the Proclamation, and the infliction menacing Dutch fishermen was for the time averted.

A conflict, however, could not long be averted between two seafaring nations, both anxious to promote their fisheries in the same seas. Spitzbergen, discovered in 1596 by the Dutch Admiral Jacob van Heemskerck, while in search of the North-West Passage, and by him appropriated in the name of his Sovereigns the States-General, next became the theatre of private naval war. English and Dutch fishermen set about working this new shaft at the same time ; but as stated in chapter II., the first attempts of the latter were unfruitful, owing mainly to the plunder-

ing of two whalers from Amsterdam off Spitzbergen, in the summer of 1612, by a fleet of English whalers well equipped for warlike proceedings. The small Dutch fleet sailed home despoiled both of fish caught and oil made, and of the instruments to catch and make more. The "Mare clausum" controversy, just quieted in the British seas, sprung up in a fresh and very critical shape beyond the Arctic circle; for the whaling seas were included in the alleged "Dominium Maris" of Great Britain. And this time the king was not to be moved, though Winwood, late ambassador of England at the Hague, and just then called to the Secretaryship of State, interceded for the Dutch claims on behalf of the States, who on their part addressed to the king a memorandum, "*Replicques fondées à l'encontre des propositions et pretentions des Anglais, d'avoir le commandement sur la Pescherie de l'île Spitzberge ou Terre Neufve,*" composed by the renowned Dutch cosmographer Plancius. There was nothing for it but to oppose violence to violence. A Dutch company was formed in 1614 (see chapter II.), and sent eighteen vessels north, under cover of three men-of-war. A truce was the consequence, and for the year 1614 the waters of Spitzbergen were divided between the parties who had come north ready to fight for them. The same armed peace again prevailed in 1615 and 1616, when the whaling fleets of both States came out under convoy, and seem to have fished in peace, keeping each other in respect. Diplomatic interference, in which the celebrated Grotius acted as a commissioner on the part of the States-General, and extensive memorializing on both sides, meanwhile led to no solution of the difference, as James I. inflexibly maintained his claim to *Dominium Maris*, and vouchsafed no answer to the Dutch Ambassador's remonstrances. Although peace

was maintained between the two Courts, war between the British and Dutch whalers under the northern lights was, of course, inevitable under these circumstances. In 1617, the States having granted an insufficient convoy to their whaling fleet, the establishment built by them at Spitzbergen was destroyed by the English. Forcible retaliation was taken by the Dutch in the next year, when open warfare seems to have prevailed in the north all the summer, occasioning, on the 3rd of October, 1618, a sharp and menacing remonstrance to the States-General from the British Ambassador, Sir Dudley Carleton, whose "*Lettres Memoires et Negociations*" (edited in English and translated into French) are a source of much information upon the fishery differences between the two nations in the years 1616-20.

Nor, in the meantime, did peace reign in the North Sea. The works of Sir Walter Raleigh* and "Gentleman"† strongly contributed to keep the spirit of rivalry awake, by giving the British public highly exaggerated notions of the profits and prosperity derived by the Dutch from the herring fishery, and stimulating England to try and evict those competitors, whether by free competition or by legislative checks. Welwood's books of juridical controversy‡ at the same time directed the public attention afresh towards England's alleged monopoly of fishing in the British waters. King James I. did not long remain deaf to exhortations so congenial to his own notions. In August, 1616, without any previous renewal of the publication of 1609,

* *Observations touching Trade and Commerce with the Hollanders* (published about 1610).

† *England's Way to Win Wealth* (published 1614).

‡ *Abridgment of all Sea Lawes* (published 1613); *De dominio Maris* (published 1616).

the king's officers by his orders demanded of Dutch fishermen a tax, or retribution of one angelot, or a barrel of herring and twelve cod-fish for every vessel fishing in the British seas. The tax was paid by most skippers until two of the convoying men-of-war's captains interceded and reported matters home. Bitter remonstrances from the States to the king ensued, but the tax was appointed to be levied again in 1617. This time, however, the officer entrusted with the duty met with a flat refusal, in the name of all the Dutch fishermen, at the hands of the captain of one of the convoying ships. Having so far executed his orders, the British officer was about to leave the Dutch herring fleet, when Captain John Albertsz, of the convoying vessel from Enkhuizen, one of those who had parleyed with the English officer in the preceding year, alleged orders to arrest him, and carried him to Holland. Two Dutch captains were instantly taken by the English, and kept as hostages. The States and Stadtholder hastened to utterly disavow Captain Albertsz' rash act, turn him out of office, and release the captured English officer. Still King James's wrath required further satisfaction, and the Dutch hostages were not returned until one of the guilty Dutch commanders, Tlieff (Albertsz being retained by sickness), had been sent to England and had been rebuked by the king in person with such asperity as might be expected in such a cause.

Scarcely had the quarrel been thus adjusted upon the offender's back, when complaints of ill-treatment by the Dutch were heard from some Scotch fishermen. A fresh interpellation from the British Ambassador at the Hague gave rise to an examination of sundry fishing skippers, which of course led to no result. The States, however, emitted a sharp edict against ill-treatment of Scotch fishermen,*

* *Gr. Pl. Boek*, i. p. 707.

charging all Dutch seamen, whether serving in herring busses or convoying men-of-war, to refrain from violence towards the subjects of His Britannic Majesty, and keep "true friendship, neighbourship and good correspondence" with them, on pain of being "punished in the body as pirates and men of violence."

Matters, then, were scarcely on an amicable footing in the North Sea, when, in the year 1619, a Dutch Embassy went to London to treat, among other matters, of the Greenland and Spitzbergen fishery question. The herring fishery was not mentioned in their instructions, a circumstance sufficient in itself to ensure them a cold reception ; and as regards the Arctic affairs they were met with an assertion of the king's unlimited sovereignty over Spitzbergen, which left small hope of coming to a definitive agreement. The king indeed in a verbal audience consented to let the Dutch fish off Spitzbergen for three years, but the restitution of goods and chattels unlawfully taken by both parties remained an unsettled question, and in point of rights "*Mare clausum*" as regards Spitzbergen was maintained as firmly as ever.

Another Dutch Embassy came to London in Janaury, 1621, with directions to negotiate on various matters of importance then pending ; and although unprovided with precise instructions regarding the fishery question, they had that question broached to them by the British Government. The States at the time were anxious to keep this delicate point out of discussion and leave it *in statu quo* ; but the king required an end to it, and the ambassadors were obliged to promise the speedy opening of negotiations on the subject, with a view to a definitive settlement of the claims of both nations. The fact that the individual claims of several Scotch herring-fishers for damage sustained on the hands

of the Dutch were in the meantime secretly settled by order of the States, stands as a proof of their anxiety at the time to conciliate England as far as it might be done without serious injury to Dutch interests.

The fresh Dutch Embassy, which sailed for England on December 8th, 1621, carried instructions which, as regards the matter of fisheries, amounted to an order to tergiversate as much as feasible. The king treated them to such language as might be expected from an aged and querulous invalid feeling wronged and aggrieved in one of his favourite pretensions; and in consequence of the tergiversating policy adopted, the Greenland and the herring fishery questions as well as the British claims for damages were as unsettled as ever when the ambassadors left England in February, 1623.

The States, who at the time had good reasons of general policy to avoid any rupture with England, towards the opening of the herring season issued orders for Dutch herring boats to refrain from approaching too near the British coast,* as, indeed, it had been tacitly understood for years that they were to keep out of sight of that coast. The damages question, however, remained unsettled, and the Dutch fished off Greenland and Spitzbergen, as well as in the North Sea, by the king's tacit acquiescence and without any agreement as to their rights to either. The demise of James I. and the Anglo-Dutch Alliance of 1625 made it possible to continue matters in this state without any serious collision, although the ancient rivalry between the nations continued, and petty claims and disputes occurred even in this period, in the causes of which there is reason to believe the misconduct of Dutch fishermen had a fair share. The publication or

* *Res. St. Gen.* June 12th, 1623.

"placard" against violence to the Scotch was renewed twice in this period of quiet, in satisfaction to British complaints.

Charles I.'s politics involved the strengthening of England's navy and the most strenuous measures to uplift her fisheries. The establishment of an Act on herring fishery, on the pattern of the Dutch laws upon the subject, and the chartering of a company for the herring fishery in 1632, are decisive instances of this tendency. But as yet the competition of Dutch herring fishermen, whose trade at the time had obtained immense development, was a serious obstacle to its progress in England, and the company founded there had but a short duration, and nothing like success.

It was not in Charles I.'s character to suffer this state of things for a long time. Selden's work on "*Mare clausum*," intended as a refutation of Grotius' "*Mare liberum*," was published in December, 1635, by the king's express order. The work instantly received general attention, the more so because, being dedicated to the king and approved by Council, it bore a semi-official character. Holland, where Selden's work was very soon reprinted, very soon also was visited with its effects. On April 5th, 1636, the king notified to the Dutch Ambassador his intention to subject all fishing in the alleged British seas to his royal license and recognizance in the shape of a special tax; and notwithstanding the States' immediate protest, a proclamation renewing the one issued by James I., and drawn in high-sounding terms, was issued on May 30th, 1636.* The king, indeed, in an audience granted to the Dutch Ambassador

* This proclamation is printed as an appendix to Mr. Muller's work before-quoted, and translated in Aitzema's *Matters of State and War*, ii. p. 306.

on the 27th of July, represented the measure as being of a peaceful nature and intended to benefit the Dutch fishermen by the protection of England against their enemies, the Dunkirk privateers. But at the same time twelve British ships of war sailed from the Downs to the Dutch herring fleet's fishing grounds; and though most of the fleet had already left, the rest were made to take the license and pay the recognition demanded of them, which indeed amounted to but two shillings per last for the year, and was paid by the fishermen without hesitation. The British Admiral, the Earl of Northumberland, nevertheless took the commander of a Dutch convoying vessel prisoner, and the Dutch Ambassador Joachimi, sent in haste to England in order to obtain redress, was met with a more than ever decided assertion of the king's right to exact last-money from any who should fish in the alleged British seas. The Dutch fishermen's readiness to pay the amount demanded of them had, as Joachimi observed to the States, greatly compromised matters.

Dutch fishermen complained loudly to the States of the proceedings in which some of them had acquiesced readily enough; and in August, 1636, a fleet of fifty-seven Dutch ships of war sailed under admiral van Dorp, with instructions to give the herring busses efficient protection, "*against the Spaniards and all others inclined to molest them.*" Van Dorp was late at his rendezvous, where he found a British squadron had already arrived, and levied the tax from most of the Dutch fishing vessels; and having no orders how to act in such a case, his presence was useless, and his position awkward. The admirals of both nations, having met in presence of the Dutch herring fleet, reciprocally asked each other why they were there? and each answered, "to protect the fishermen." Both squadrons soon after-

wards left the spot for other business, and the net result of the season's proceedings was the carrying off of some twenty thousand florins as license-money by the British admiral, and the establishment in England of a general, though unfounded, notion that the Dutch States had tacitly acquiesced in the tax for the future, and acknowledged the sovereignty of England in the North Sea. The notion was so far from being exact that the Dutch admiral van Dorp was punished for his insufficient protection of the fleet by having his demission pressed upon him, in the following year, in such terms as moved him to instantly retire from office.

Although far from acquiescing, the States were still anxious to evade a definitive settlement of the sea-sovereignty question. When, in October, 1636, they negotiated an alliance with England against Spain, the king's promise to leave the Dutch fishermen unmolested as long as the proposed alliance should last, was asked for as a set-off against certain concessions on the Dutch side, without anything being said on the principle of "*Mare liberum*" or "*clausum*." Pending the very intricate and delicate negotiations on the Anglo-French alliance, in which the whole of European politics were at issue, Charles had reason to pacify the Dutch Republic, and accordingly left her fishermen in quiet during the herring season of the year 1637; and the States on their side managed to keep the question out of view, though they never once departed from their alleged right of free-fishing. A learned treatise in refutation of Selden's "*Mare clausum*" was about this time composed by the States order, by one Dirk Graswinckel; but it was thought advisable not to publish it, and Grotius himself, then in Swedish service after his disgrace and escape from his

mother country, had good reason not to meddle even with the merely scientific side of the matter any more, because, as he wrote to his brother in 1636, "*Ego, cum Suecia multum teneat orae maritimae, quid aliud praestare possum quam silentium?*" The policy of "not waking sleeping dogs" was in those days prevalent on all hands, and a summer's unmolested fishing was the result for the Dutch herring busses.

The naval battle of the Downs (October 21st, 1639), in which the Dutch fleet under Tromp routed that of Spain within the so-called "King's chambers," and in spite of Charles the I.'s inclining towards Spain, was of wide consequence even for the fishery interest. The engagement constituted a most flagrant breach of Charles's alleged sovereignty of the sea; but at the same time it showed to what a pitch the Republic's naval power had in the meantime ascended. The British pretences to sea-kingdom were virtually at an end after the affront of the Downs, which never was resented openly. The king having on October 10th, 1639, pressed the States to accede to the Franco-British alliance, under promise that their freedom to fish in the straits should ensue from such accession, their answer was: "they did not intend to stipulate that right from any one," being, indeed, in tranquil possession of it. Striking instances of outrageous treatment from Dutch fishermen to British subjects occurred at this period.* Feeling themselves masters of the sea, they indulged in acts of piracy, which Charles, then sorely

* Such acts were committed even before the battle of the Downs. On the 26th of May, 1638, the States-General examined the matter of a captain from Enkhuizen who appears to have gone ashore on a piratical expedition, and plundered and sacked the house of one Robert Sherret, a merchant of Ireland.

intent on home affairs, was not at leisure to resent. The events of 1640 utterly broke the king's power to make himself respected abroad, and the impending fall of the House of Stuart put an end, for a long period, to open contestation between the two nations as regards the right to fishery in the North Sea. Under Cromwell, other and still more important questions than that of the free sea fishery were at issue between the two then greatest naval powers of Europe; and their next collisions were the beginning of that series of naval wars, the effects of which upon the Dutch sea fisheries have already been described in former chapters. Nor does the "*Dominium Maris*" question, as between Great Britain and the Dutch Republic, appear to have told upon the actual state of the fishery in later years, though it continued for some time to influence the diplomatical relations between the two countries, especially in 1661, when British influence considerably retarded the conclusion of a treaty between France and the Republic, by which the former power engaged to protect the latter's fishermen.

Besides England, Denmark has at several periods pretended to "*Dominium Maris*," in the shape of a fishing monopoly within a certain range from the shores of Greenland, Iceland, and Spitzbergen. The Danish claims never had anything like the importance of the British; for, besides being preferred by a power much less formidable, they bore exclusively upon two minor branches of sea fishery, viz. the whale and the cod-fish business. Still, as Denmark more than once actually interfered with Dutch fishery in virtue of these claims, they are entitled to a brief mention in these pages.

The first instance I have found of controversies on

fisheries with Denmark dates from the year 1615, just after the first successes of the Arctic Company. On February 18th of the said year the King of Denmark wrote to the States-General about the Dutch whaling expeditions, and claimed for himself the exclusive right to allow his subjects to whale off Greenland, to the exclusion of all foreigners unless provided with a Danish licence. The reason given was, that "the waters in question are off the northerly shores of our Empire." Some contribution from Dutch whalers had already been pretended to by a Danish ship of war in the season of 1615, but had then been refused by the former on the plea that they knew of no title to the exaction. The British claims to the whaling monopoly off Spitzbergen probably moved Denmark to a similar measure relative to Greenland. But the States-General, in their answer to the Royal Dane, politely but peremptorily declined the latter claim as well as the former ; and Denmark preparing for violent interference with the Dutch whalers, the States accommodated the latter with artillery and ammunition, besides granting them such convoy as kept the Danes in respect.*

Next, in 1635, the Danish Sovereign preferred similar pretensions to a fishing monopoly off Iceland. A letter from the King remonstrating against the Dutch fishing off the shores of that island was laid by the States-General before those of Holland, who took the advice of the Arctic Company upon it. The latter were just then engaged in difficulties about the renovation of their charter, and owing, perhaps, to this circumstance, although the King of Denmark renewed his protestations, and even employed a Dutch merchant residing at Copenhagen to remind the States of them, he got no answer for two years. A

* *Res. St. Gen.*, April 13th, 28th ; May 11th, 12th, and June 2nd, 1616.

memorial was addressed to Denmark in 1637 to refute their claims to a whaling monopoly off Iceland, and as these claims are not mentioned again in the States' Resolutions of the next years, they appear to have been suffered to drop, as had the Greenland difficulties in 1616. Still, pretensions of the said nature were not given up by Denmark. In 1639 Dutch whalers were menaced and annoyed by Danish men-of-war, in virtue of a law issued against all who should fish off Spitzbergen without a Danish passport; and once more a "well-reasoned memorial" from the States appears to have settled matters. It would indeed have been indifferent policy for Denmark to push them too far against a power whose navy had just then beaten Spain and kept England at bay in the famous battle of the Downs. I have found no further mention of fishery difficulties with Denmark till a century later, when the Danish claims for the first time gave rise to actual violence, the first motive for which, however, was taken not from a fishing but from a trading monopoly.

It has been recorded in another chapter that Dutch whalers used in the eighteenth century to apply themselves, besides the exercise of their industry properly said, to traffic with the natives of the Arctic countries. This trade first occasioned a collision between Denmark and Holland in the year 1739, in a bay near Disco Island, Greenland. A Dutch whaler anchored there, and doing business with the natives, was arrested and captured by a Danish man-of-war, and four more Dutch vessels, equally trading with the inhabitants, soon after endured a regular bombardment by three of the King of Denmark's ships, whose commander, having captured the vessels and crews, launched the latter off to sea in open boats, and brought the ships

to Denmark as prizes. The Dutch sailors only escaped death from starvation by their happily falling in with some of their countrymen's vessels after a few days' navigation, who carried them home and reported what had happened. The Commissioners of the Greenland fishery of course lost no time in petitioning the States for redress ; and the proprietors of the captured Dutch vessels meanwhile resorted to retaliation by arresting a Danish vessel then lying at Amsterdam. This at once called forth a protest from the Danish Ambassador Griis (or Grys), who, while demanding the release of the arrested ship, stated the alleged cause of the proceedings against the Dutch in Greenland to be a monopoly of trade granted to a Danish subject on certain parts of that coast, including the bay near Disco where the above-mentioned facts had occurred. The Republic was then no longer as formidable a naval power as a century before, and the States saw fit on this occasion to use the utmost forbearance. They showed to the Danish diplomatist that the arrest laid on one of his country's merchant vessels was a matter of civil litigation, and therefore could not occasion an intervention by the political authorities ; but at the same time they prevailed upon the magistrates of Amsterdam and the parties concerned to release the Danish vessel, a measure dictated by *comitas gentium*, which, as the States did not fail to represent to the Danish Ambassador, they expected to be responded to by the release of the four captured Dutch vessels. Denmark, far from consenting to such an amicable termination of the difference, gave it considerable extension by falling upon the Dutch cod-fishing fleet, then assembled round Iceland to the number of about one hundred vessels. After some chasing and annoying of this fleet, Danish men-of-war ultimately captured four

of the hookers ; but while being brought to Denmark one of them succeeded in effecting her escape, and carried to Holland, as prisoners, a Danish midshipman and three common seamen who had been put on board to bring the prize into port. The quarrel, which had at first revolved upon an alleged monopoly of trade ashore, thus became a fishery question ; and from the diplomatic correspondence which was at once opened on the matter it appeared that Denmark based her action on a pretended *exclusive right of Danish subjects to all fishery and navigation within four miles of the coasts of all Danish possessions in the Arctic seas*. Whether or not it may have been true, as was stated in a petition to the States by "the common shipowners of the cod fishery about Iceland," that while chasing and capturing Dutch fishermen the Danes had left those of France and England unmolested, here was "Dominium Maris" come to life again, and the matter therefore called for the Republic's utmost vigilance and energy.

A series of remonstrances were accordingly presented to the Danish Government by the Dutch Ambassador at Copenhagen in the course of the years 1740 and 1741. As regards the means of actual compulsion, Holland indeed spoiled her case at the very outset, by reiterating the extreme forbearance used towards the Danish vessel arrested at Amsterdam in 1739. Upon the Danish Ambassador's request the States in 1740 ordered the Admiralty of Amsterdam to set the captive Danish sailors at liberty, whereas the captured Dutch ships had been declared by the Danish magistrates to be lawful prizes, and eventually sold in public auction at Copenhagen. The point of law meanwhile gave rise to extensive memorializing on both sides. It was alleged by Denmark that all foreign vessels were prohibited from approaching within four miles of the

Iceland coast, by a law issued in 1733, in confirmation of a privilege granted in 1682 to a Danish trading company; and that the Dutch cod fishers made unlawful trading, contrary to this act, their principal business, to the ruin of the Danish traffic on the Iceland shores. To this, the Dutch Ambassador opposed the non-acquaintance of his Government with the law and privilege in question, and the fact that Dutch vessels had, up to the year 1739, constantly been allowed to fish and trade unmolested on the coasts of both Greenland and Iceland. The right to both was averred to belong to the Dutch in virtue of certain ancient treaties, one of which, dated 1447, established the rights of the Dutch to free navigation "*usque ad Boreæ oras.*" In this, as in former disputes of the same nature with England, the historical side of the question was strenuously discussed, without leading to acquiescence on either side. The Dutch pretensions were advocated with considerable energy by Mauricius, then Dutch Ambassador at Hamburg, who though not called upon by his diplomatical duties personally to act in the matter, made the rights of both parties the subject of very profound and ample historical investigation, the results of which, in the shape of a series of memorials, he sent to the States-General, who drew from them the materials for the notes and remonstrances they ordered their minister at Copenhagen, Coymans, to present to the Danish Government.* Far from bringing about an agree-

* Mauricius' several Memorials on the subject, together forming a goodly folio volume, have been printed, and a copy of them is extant in the Royal Netherlands Library. The volume gives astonishing evidence to the mass of labour bestowed by this learned diplomatist upon a matter alien to his own professional duties at Hamburg, from which town the whole of the documents are dated. For the course of facts and negotiations see *Res. Holland*, 1739, 1740, 1741; *Res. St. Gen.* of the same years; the secret *Resolutions of Holland*, 1740, 1742, and

ment this diplomatic debate only led to the question at issue assuming more and more serious proportions ; and finally, when remonstrances on both sides had gone on for more than a year, a distinct pretension to “ la domination de la Mer du Nord ” as the source and origin of the right to exclude foreign vessels from the coasts of islands in the said sea, was set on foot by the Danish Government in August 1741. The States-General immediately ordered their ambassador to deny this pretension in the most energetic terms, “ because other potentates might follow the example of Denmark, to the inestimable prejudice of these countries’ trade and traffic in general.” Denmark at the same time sent a squadron north to enforce her claims, and the Dutch Whaling Commissioners obtained convoy from the States. A warlike conflict between the two naval Powers seemed imminent, but was ultimately averted by the intercession, in favour of the Republic, of the British and French Ministers at Copenhagen. “ Mare liberum ” was the base of their joint remonstrance, in which it is worthy of note that a British diplomatist should have been employed, in opposition to another naval Power’s pretension to “ Maris dominium.” The matter was subsequently adjusted by an understanding that Dutch vessels should not trade within the precincts of the Danish provinces in the Arctic seas ; and a placard against such trade was issued by the States-General on April 15th, 1762.* The limit of four miles from the shores of these provinces appears to have been afterwards interpreted by Denmark, not as a prohibition

the periodical called *Europische Mercurius*, 1741, vol. i. p. 313. Wagenaar (*Vad. Hist.* xix. p. 279) gives but a very incomplete account of the matter, and plainly was not acquainted with its true bearings, having never read the Mauricius papers.

* *Res. Holl.* 1762, p. 508.

to fish within that region, but as a precaution against foreign fishing vessels going ashore for trading purposes, and the commanders of Danish men-of-war in the Northern Seas constantly had orders not to molest such fishermen as should occasionally be found within the said limit, provided they should not show any disposition to trade.*

PART III.

SEA FISHERIES SINCE THE END OF THE DUTCH REPUBLIC.

CHAPTER I.

1795-1813.

THE Revolution of 1794-5 transformed the Republic of the United Netherlands into a Batavian republic, at first based upon the principle of the former United Netherlands, and some time afterwards remodelled upon the pattern of the French Republic. A gradual reform of ancient rotten institutions attended these events; but the rules and rulers of sea fisheries survived the wreck of the rest.

The "College of the Grand Fishery" was indeed abolished in 1795; but a similar body was at the same time appointed, under the more modern and French sounding title of "Committee for the Affairs of the Grand Fishery," by a decree of the provisional legislative body dated May 12th. The members of the new Board appear to have been freshmen in their business; for the committee was unable to make the necessary provisions before the

* *Res. Holl.* 1761, p. 974; 1762, pp. 314, 650; 1774, p. 494.

busses' sailing day (June 24th), and some herring shipowners were, at their request, appointed by the representatives of Holland to arrange matters, under the title of a "Provisional Committee for the Direction of the Grand Fishery."

Besides taking the necessary steps towards the timely sailing of the fleet, this provisional Board tried to make out the financial status of the ancient college's administration. They found this an arduous task ; for the college's accounts were scarcely in a creditable condition. Their secretary was dead ; their chief clerk declined to give up the more important papers to the new committee ; and the latter, in such accounts as were delivered up to them, found many instances of maladministration. Considerable sums had been spent in banquets, the inevitable appendix of every meeting of a Dutch Government Board in former times. Herrings for the customary presents to certain authorities had been bought from some privileged shipowners at the very highest prices ; the towns of the south quarter represented in the college had rendered no accounts, and their "buss convoyer," or "hospital ship," to equip which was one of the college's principal duties, had been taken by the French two years before, and not replaced. Commissioners from the "Committees of Public Welfare, Marine and Finance," had to intervene in order to make the refractory college clerk give up such part of his books as he had chosen to secrete. In a word, it was shown that the college's administration had latterly been anything but an exception to the general rottenness and mass of abuses prevalent in the old Republic's later years.*

Sea fisheries were scarcely then in a better condition than the books of their administrators. The war with France in 1794 had forced part of the herring fleet to

* *Vervolg op Wagenaar*, vol. xxxiv. p. 138 sqq.

return into port as early as the first days of July; and in September the French had taken the whole of the cod fishing fleet.* To apply for pecuniary aid was therefore one of the first acts of the new committee; and the several immunities previously granted to the herring fishery were accordingly continued by the government of the new Republic. As for subsidies, the committee in 1795 refrained from applying for them, in consideration of the exhausted state of the country's exchequer; but at the same time directed the attention of Government towards the expediency of ulteriorly granting the Grand Fishery the same aid which they had enjoyed under the defunct Republic.† But there was little occasion for subsidy in the next years, as the protracted war with England, which at one time nearly swept the Dutch colours away from the face of the seas, stopped all or most fishing expeditions. The main feature of this history in the years between the overthrow of the Republic of the United Netherlands and the restoration of 1813 is, that there was some legislation, but very little fishery. Sailors and vessels belonging to the latter were often pressed into the country's service; and a publication against resisting such requisitions had to be issued by the Executive Board on July 4th, 1798. A re-organisation of the committee for the Grand Fishery took place on November 20th of the same year, but as yet only the title of Provisional Committee was given them, and there is no evidence of the extent of their business transactions having warranted another name. Their only act in the last two years of the century is indicative of the very depressed condition, if not the utter stand-still, of the

* *Nieuwe Jaarboeken*, a° 1794, p. 1218; *Gevers, de magno sive halecum piscatu*, p. 61 sqq.

† *Gevers, de magno sive halecum piscatu*, p. 63.

North Sea herring fishery. Some export trade in herring was then kept up by the unlawful processes of re-packing imported foreign herring and cured "pan-herring," caught in the Zuider Zee ; a sure proof that the Grand, or North Sea Fishery could not supply the market. But, although obliged by the troublous times to refrain from their trade, the Grand Fishery would not allow others, who acted under more favourable circumstances, to interfere with it. Several herring dealers in July 1799 applied to Government for a prohibition against the re-packing of foreign herring, and a strict application of the herring laws of the former Republic, which had never been repealed, and were expressly maintained in force by publication of November 20th, 1798 ; and the Committee of the Grand Fishery of course seconded the application. In consequence, on May 30th, 1800, a publication was issued to the effect that all herring imported from abroad should be re-exported in the same barrels, without undergoing any manipulation whatever ; and that no "pan-herring" caught in the Zuider Zee should be cured or laid in barrels as pickle-herring. The considerations upon which this edict is based are a remarkable instance of the spirit of monopoly surviving the trade, and excluding competition even when competitors had the market all to themselves. Zuider Zee herring, says the publication, cannot be packed so as to acquire the taste of the Grand Fishery's produce ; the former is never cured on board, but always ashore, and while being carried home uncured is crushed into a jelly,* by the motion of the vessel ; and it is generally caught in spring, when it can be sold at very low prices, so as to seriously depress those of early cured-herring from the North Sea, and injure the reputation of Batavian brand-herring abroad. The same

* "*Als in hare p  p wordt gaar gekookt.*"

contradictory statements in which the Grand Fishery were found out while insisting upon their curing monopoly against the North Sea coast fishermen in 1751* were now repeated by them against those of the Zuider Zee. Letting alone the improbability of herring getting "crushed into a jelly," during a transport home which upon the Zuider Zee must have generally been of but a few hours' duration, how could herring so crushed be cured with a result so satisfactory as by its competition to endanger the Grand Fishery? As a fact, Zuider Zee cured-herring was certainly of worse quality than Dutch, or, as it was styled at the time, Batavian brand cured on board in the North Sea; but the former was taken by the markets abroad, where it certainly was more profitable to sell Zuider Zee herring than to sell none at all.

The Grand Fishery's stand-still at the time is proved, if not by any positive testimonies, by the fact that even the coast fishery had come to a dead stop. If Dutch bum-boats could not fish under the Dutch coast in 1799 because of the English cruisers, Dutch busses certainly could not venture into their fishing areas off Shetland and Yarmouth. And as regards the former, the forced stoppage of their trade in the season of 1799 is established by several petitions preferred by the municipality of Katwijk, suing for a subsidy to maintain their poor, "because in the present circumstances no fishery whatever can take place in the North Sea." They applied for a weekly bounty of fl.40 for each bum-boat and fl.8 for each of the smaller or shrimping boats, instead of which the first Chamber decreed to allow the village a subsidy of fl.2000 down, towards the maintenance of their poor. But the second Chamber declined to ratify the edict; and the "poor fishers

* See part ii. chap. iv.

of the Side," of whose often very miserable condition we have had evidence in a former part of this work, had to go without any relief from Government. It might have been found advisable under such circumstances to let Zuider Zee fishermen at least have the full benefit of the exceptionally sheltered position of their fishing water. But, as shown above, the spirit of monopoly bore them down and kept them within the old legislative trammels, even when they were virtually the only branch of sea fishery still in action.

In the midst of this general stand-still of the business the legislative bodies gave birth to a very prolix and detailed fishery law, viz., the Publication of July 28th, 1801; the preparation of which, although it was mainly a repetition of existing regulations, had lasted since the summer of 1800. This law has been in vigour for a very few years only, and during the fisheries' greatest decay. It is nevertheless important in the history of Dutch fishery legislation for more reasons than one. In the first place, it is a thorough proof that the Revolution had brought no change whatever into the fishers' and fish dealers' notions. Secondly, the law is, so to say, a crystallisation of the various statutes and rules which emanated on the subject under the republic of the United Netherlands, and reflects the whole of the herring legislation from its beginning downwards; while in its turn it has been the model for Acts of later date. Thirdly, the law of July 28th, 1801, contains many clauses apparently taken from bye-laws made by the ancient College of the Grand Fishery, of which I have not found the text in any official publication of earlier date.

The greater part of this herring law of 1801 is a faithful, and in many clauses a literal reproduction of the placards on the Grand Fishery of 1582 and following years, the contents of which have been exposed at some

length in Part II. of the present essay. The "Committee for the Grand Fishery" was definitely organized by this law, and their competency was much the same as that of the college of old. They were to deliver licences (*acten van consent*) to the masters of all herring busses and sale-hunters, and of such cod-fishing vessels as should carry herring nets; to swear in the masters, and two of the crews of all the said vessels to observance of the law; to provide "hospital ships" (the nature of which will be shown hereafter); to issue instructions to the captains of the same, levy last-money, and advise Government on all matters of fishery legislation. The working rules relative to the opening and close of the herring season (June 24th—Dec. ult.):—to the curing, sorting, packing and further handling of herring on board; the prohibition to carry herring to a foreign port, or transfer it at sea to any but licensed sale-hunters, or to any one after July 15th; the interdiction from selling salt and fishing implements to foreigners, or from taking service on foreign fishing vessels; the police regulations for fishermen at sea, and the rules relative to the hiring and payment of sailors, and the terms between them and the busses' masters and owners; to the salt to be used, the packing of herring, and branding of barrels ashore—these several rules were all re-edited to nearly the same effect, and partly in the very same terms, as in the several placards in vigour under the Republic of the United Provinces. Laws of many dates, and scattered over many volumes of the Grand Placard Book, were now assembled into one statute, in virtue of the principle of codification brought into use as one of the far-spreading consequences of the French Revolution.

Of the clauses now sanctioned for the first time by the law of the realm, and most probably taken from former

College bye-laws, the following are the most interesting :—

No herring-buss to put to sea without a complete 'fleet' of forty nets at the least (Art. 2).

No buss to sail home during sale-hunting time (i.e. between June 24th and July 15th), or come into port before July 19th, unless with a complete cargo, i.e. with the whole of her barrels packed full of herring treated according to law (Art. 15). This is the first legal sanction of the *monopoly of sale-hunting*, of which more shall be said in a following chapter. The institution may have existed before, as a College bye-law, but not before 1753, as it is not mentioned in v. d. Lely's 'Recueil.'

Herring-nets to be subject to control, as well as herring barrels. A complete set of regulations relative to the nets to be used in the cured-herring fishery was enacted in 1801 (Arts. 67-73).*

The sizes of both nets and meshes, and the quality of the hemp to be used in them, were prescribed in detail. Previous to delivery to the owner, every herring-net was to be submitted to inspection by a male or female "counter" (*teller of telster*), i.e. a sworn official entitled to verify and certify to the size and number of the meshes and the dimensions of the net ; and the very hemp intended to be spun into yarn for herring-nets was to be previously

* The style of these articles is in some parts so antiquated and different from the usual wording of laws in the first years of the present century, as to make it particularly probable that they were modelled upon some bye-law of the former College's making, and of a much older date. An "order" relative to herring-net making, dated 1579 and arrested by "the *four towns*" then incorporated in the College, is mentioned on p. 15 of v. d. Lely's *Recueil*, without further reference to its contents.

inspected by a "keurmeester" or assayer. Other materials than Dutch hemp were prohibited from being used in herring-nets. No nets were to be used unless marked by the "counter" with a leaden seal bearing the name and arms of the town, and the official's own initials.

The most important innovations contained in the law of 1801 are, however, the clauses relative to the rights of the several branches of North Sea Fishery; about which rights, as has been shown in Part II., differences had formerly arisen. The several monopolies, the limits of which had in the course of the eighteenth century been for the greater part established by College bye-laws, were now, for the first time, sundered and defined by ordinary legislation.

The Grand Fishery having the monopoly of curing, was restricted to that business, and forbidden to use the process called *steuren*,* i.e. to salt herring in baskets ungutted, for the purpose of ulterior curage by smoke. The busses' steersmen were allowed to preserve herring in this fashion in two cases only; viz., when all the barrels on board should have been filled with cured herring, in consequence of an exceptionally felicitous catch, and when it should be impossible, by reason of foul weather and high sea, to use the proper method of curing (*kaken*), which required considerable attention from the whole of the ship's hands simultaneously. If any herring had been salted in the former manner by reason of either of the said circumstances, a peculiar oath to the fact was to be taken by the vessel's steersmen and two of her crew, immediately upon entering port (Art. 19).

The monopoly of the "*steurharing*" business being

* See part ii. chap. iv.

thus assured to the fresh fishery, the latter were likewise subjected to a complete set of rules. They were, in the first place, strictly forbidden to cure (*kaken*) any herring either on board or ashore, under any pretence or for any purpose whatever (Art. 93). For the better enforcement of this prohibition, which as will be remembered existed under the former Republic as a bye-law of the Herring College's making,* steersmen of the fresh-herring fishery were prohibited from sailing before September 14th, or from casting their nets before September 20th of each year (Art. 91). They were, as formerly, obliged before sailing to take out a peculiar licence under the seal of the Grand Fishery Committee, and take oath to observe the laws and regulations relative to their trade (Arts. 88, 89). They were subject to last-money to the amount of fl. 3 per twelve thousand herrings, the same amount being due for every last, of fourteen barrels, of cured-herring brought into port by the herring busses (Arts. 17, 99). To ensure the recovery of this tax, which, as formerly, was levied by the committee's officers for the benefit of their treasury, the steersmen of all fresh-herring smacks were bound to have their cargoes of "steurharing" examined and counted by municipal officials, who made the necessary declarations to the committee's last-money collectors. The steersmen of the Grand Fishery were subject to no such obligations, for they had to deliver up their barrels of cured herring (or *pickle-herring*) to the assayer, whose examination was sufficient control over their declaration for last-money to be paid.

In the third place, the North Sea cod-fishermen's attributions as regards herring-fishery were established in detail by the law of 1801 (Arts. 21, 22). They were, as

* See part ii. chap. iv.

formerly, permitted to catch herring for bait at all seasons ; but if sailing before the 15th of July were not allowed to have more than eight herring-nets on board, and ten if sailing at a later date. In the former case, they were prohibited from curing or preserving any herring whatever unless for immediate use as bait for cod-fish ; and all sale, barter, or transfer of salted herring was strictly interdicted to them. If sailed after the 15th of July, they were allowed to cure the remnant of their herring left after providing the necessary bait ; but such herring was not to be sold unless in open barrels, and qualified as “mixed” (*ongezonderden*) herring, subject to previous inspection by the assayer, who was to destroy the herring thus brought into port if found unfit for consumption. The object of these rules was to secure the Grand Fishery the unrestricted monopoly of curing till the 15th of July, i.e. the day on which the last “sale-hunter” was to leave the herring fleet and sail home ; and even after the said date to prevent the cod-fishery from offering the cured-herring business any serious concurrence.

Such are the principal contents of the Herring Law of 1801. It was, as has been shown, a codification of the rules in vigour under the Republic of the United Netherlands, whether established by the legislator of the realm or by the Herring College’s ill-defined but seldom-questioned authority.

Besides the law itself, which is composed of no less than 109 clauses, and a series of forms of oath annexed to it in imitation of the Placard of 1656,* the publication of July 28th, 1801, contains two more documents requiring peculiar mention, viz., an instruction for the members of the “Grand Fishery Committee of the Batavian Republic,”

* See part ii. chap. i.

and a form of commission for the commanders of their buss-convoyers, or hospital ships.

The former instruction, issued in lieu of the provisional organisation of the year 1798, contains the following principal clauses :

The committee is to superintend the whole business of the Grand Fishery (and indeed, as appears from the terms of the law just mentioned, much of that of the fresh-herring trade) under the supreme supervision of Government (then the "Uitvoerend Bewind" or executive board of the Batavian Republic). The committee is to be composed of nine members, *all of whom are to be privately concerned in the herring-fishery*, and appointed, subject to approbation by Government, by the managing owners (*boekhouders*) of herring busses in the towns and villages most concerned, viz., four by Vlaardingen,* two by Maassluis, two by Enkhuizen, and one by de Rijp. If the Grand Fishery be ulteriorly exercised or extended in other towns, such towns shall be entitled to appoint one further member of the committee if fifteen busses be equipped there ; and if the number of such busses exceed forty, they shall be entitled to apply to Government for their further representation in the committee. The latter body's place of meeting, formerly Delft, is now fixed at the Hague. They are entitled to appoint their several officers and last-money collectors, and to regulate the latter's salaries and caution-moneys under Government approbation. They shall annually elect their chairman, and hold their first and

* This town was not a prominent "herring town" in the earlier times of the old Republic, and was repeatedly declined admission to the College of the Grand Fishery. Vlaardingen's greatness in the trade seems to date from the latter half of the 18th century ; it has been foremost in it ever since.

second meetings on the first Mondays in March and May, having previously conferred with the shipowners in the several towns and on the sea-coast, and taken their instructions as to the subjects to be considered for the several interests of the cured and fresh-herring fisheries. They shall annually render an account of their financial administration to a delegate from Government, in presence of such shipowners as shall choose to attend their meeting designated for the purpose; and their account is to be ultimately submitted to the Commissioners of the National Accounts (or supreme Government Board of Control) for liquidation. The said administration involved, as receipts, the last-money mentioned in the above law, and Government subsidies; as expenditure, the equipment, manning, and victualling of hospital-ships, the salaries of committee officers, and other general expenses. The committee's members were entitled to nothing beyond travelling expenses under a certain tariff. They were under oath to Government strictly and honestly to fulfil their several duties.

The form of commissions for commander of hospital-ships annexed to the law of 1801 throws much light upon the convoying institutions of the time. The hospital-ship, also called "buss convoyer," appears to be the ultimate result of a gradual transformation of the "direction-ships," anciently sent by the college after the herring fleet to protect them against enemies, and to enforce the rules of fishery police upon them.*

The "hospital-ships" of 1801, if they were still armed

* "Hospital ships" were sent out with the herring fleet under the old republic, *in time of peace*, when convoy properly said was unnecessary; v. d. Lely's *Recueil* mentions the cost of two "hospital-ships" in 1714 and following years, without stating their precise nature at the time.

convoying vessels like the "direction ships" of old, were mainly intended for peaceful purposes. Their captains' instructions indeed contained an injunction "to use good seamanship *and soldiership*," but the rest of their vessels' attributes, as apparent from the same document, are such as no man-of-war could carry out without very serious prejudice to the latter function. They were to be floating lazarets, marine stores, and wharves for the busses' convenience, whom they were bound to assist with surgeons and carpenters, spare rigging, and all such materials as they should require. They were to relieve the busses of their sick, and provide them with able seamen instead, and in general see that no buss should be obliged to sail home prematurely by reason of avary or lack of hands. In some cases the captain was instructed to act in concert with the commander "of the other hospital-ship;" whence it is evident that no more than two used as a rule to be sent after the fleet; and both of them were constantly to sail round the herring fleet, and carry signals to enable busses in distress to find them out.

A short while after the establishment of the law of 1801, and the definitive organisation of the Committee of the Grand Fishery, the preliminaries of London were signed; and in the next spring the short-lived Peace of Amiens opened the sea for peaceful pursuits. Sea-fishery was instantly recommenced, and of course its beginnings were attended with such financial difficulties as shipowners had in former years been accustomed to overcome by the aid of bounties. Accordingly, to sue for premiums to herring-busses was one of the first acts of the now established committee; and besides, they applied for the subsidy which the provisional committee had not enjoyed during the stagnation of herring-fishery. A subsidy of

fl.3000 was granted them on January 15th, 1802, and on May 21st the sum was increased to fl.12,800, by the addition of the ordinary subsidies, which had been kept back in the preceding years. Besides the subsidies, which as formerly were intended to cover general College expenditure, a premium of fl.700 for each buss to sail in that year was allowed by the Legislative Body on April 27th, somewhat to the committee's disappointment, as the sums applied for by them were fl.800 for 1802, and fl.500 for the next ten years. The other branches of sea-fishery likewise applied for premiums to recommence their business. The Commissioners of the Greenland fishery * had the highest pretensions of all, and sued for fl.3000 as a premium for each whaler carrying forty men and seven boats, besides fl.5000 as an indemnification for each of twenty-nine whalers which had been sent north in 1798, and all taken by the English. As, however, the Treasury could afford no such largess, they had to be content with fl.2000 for each whaling ship equipped and sailed in 1802, besides the "indemnization" † formerly held out by the Placard of October 3rd, 1788, ‡ to the amount of fl.50 for each quarter of train oil wanting to a hundred in each cargo. The commissioners of the small, or Iceland cod-fishery at Vlaardingen and Maassluis § were likewise accommodated with bounties to the amount of fl.700 for each vessel, and the fresh-herring fishery of the Side had fl.200 held out to them as a premium for each bum-boat. || One hundred and sixty-eight busses sailed in this memorable year of peace, 1802; and it may be readily

* See part ii. chap. ii.

† "*Premie van dedommagement.*"

‡ See part ii. chap. ii.

§ See part ii. chap. iii.

|| *Notulen van het Staatsbewind*, Dec. 1801—June, 1802, *passim*.

assumed that, as a consequence of the re-establishment of the premium system for all the several branches, the revival of sea-fisheries was general, and shared by the other branches besides the Grand Fishery. At any rate, such a revival of the fisheries and the trades dependent on them was counted upon as certain after the peace of Amiens, as is proved by a publication dated April 22nd, renewing the prohibition issued by the States-General in 1778,* against exporting well-boats for cod-fishery.

As an instance of the spirit of enterprise infused into those concerned in sea-fisheries in the year 1802, the institution of an African whaling society may be cited. A report had spread that whales were very plentiful about the Cape of Good Hope, so that, although they were of a small size and yielded train of an inferior quality, a renewal of the ancient Greenland Company's first successes might be hoped for. Accordingly a corporation styling itself "South Sea Whaling Company" was started in 1802, and subscriptions to it soon reached the considerable figure of fl.790,000. They obtained a Government charter of monopoly to last twenty years. Government (then the Executive Board called "Staatsbewind") indeed judged all monopolies "hateful and contrary to that equality" of all citizens, which formed one of the fundamental principles of the Batavian Republic; but they undertook to reconcile monopoly and "equality" by an ingenious wording of the charter. As a precaution against their superseding the ancient Greenland whalery, the new company were obliged by their charter to take a one-eighth share in every vessel sailing to Greenland, if the owners of such a vessel should demand it, and to a maximum of one-fourth of the company's paid up capital.†

* See part ii. chap. iii.

† *Vervolg op Wagenaar*, vol. xlv. pp. 54, 327.

The rupture of the peace of Amiens in the next year stopped these hopeful beginnings. The blow was the heavier, as considerable preparations for sea-fishery had been made in the first months of the year, under the continued stimulus of premiums, which were granted again in 1803, to the amount of fl.700 and fl.500, for the next eleven years, for busses and hookers employed in the cured-herring and cod-fisheries. To prevent the utter loss of the capital invested in vessels and equipment by the time war had recommenced, the Committee for the Grand Fishery asked Government to apply for passports from England; but far from acceding to the petition, the "Staatsbewind" on June 6th ordered the Committee to prevent the sailing of busses. Several shipowners next applied for permission to sail under the colours of neutral Powers, but were likewise forbidden to carry out their purpose. Coast fishermen were subjected to particularly rigorous measures. Napoleon's grand project of a descent on the British shores was then so far ripened as to make him anxious for the preservation of a store of flat-bottomed vessels in the hands of his ally and subordinate the Batavian Republic; whence England was, with excellent reasons, peculiarly anxious to capture and destroy Dutch fishing craft from the coast. Many smacks were taken in the beginning of the war; and so great was the terror spread by these events, that an order against the sailing of bum-boats from the side was soon followed by another, purporting that all such boats should be secured out of the enemy's sight *behind* the downs. It is, and probably was always customary to haul the "*pinken*" or bum-boats up the beach, close under the outer declivity of the sand-downs, either for repair or during the short interval between the herring and hook-fishery seasons, so high as to

be beyond the highest tide. But I am not aware of another instance of their having been hauled completely across the first range of downs, and the operation must certainly have been a very difficult one. Government, however, set much store by the order being strictly executed. It was feared that, if the smacks were left ashore so as to be visible from the sea, they might be destroyed by British artillery, or burnt in some successful landing razzia; and such an event would not only have been a severe infliction upon shipowners, but also have brought down upon the Batavian Government the displeasure of their powerful ally in the south, who wanted the boats to be preserved for his ulterior military views. The coast fishermen of Scheveningen, Katwijk and Noordwijk opposed the measure, and baulked its execution for some time, but it was ultimately carried out all over the coast, and as regards Scheveningen was enforced by the intervention of the municipal authorities of the Hague. As an instance of the extreme reluctance of shipowners to subject their bum-boats to the operation prescribed, some fishermen of Noordwijk tried to evade the order on the plea that their boats were no longer subject to the Batavian law, having been sold to Prussian subjects.*

And now there was virtually an end of Dutch sea-fishery for some years. Herring shipowners in the course of the year 1803 tried, but in vain, to obtain a premium as an indemnification for having equipped their vessels to no purpose,† and some of them ultimately sought to cover part of their outlays by fishing for cod on the Dogger bank, and occasionally trying a cast for herring, towards which end

* *Vervolg op Wagenaar*, p. 249, sqq. *Notulen van het Staatsbewind*, June-Dec. 1803, Jan. 1804, passim.

† *Notulen Staatsbewind* 1803, passim.

they obtained from the Legislative Body a dispensation of the law of 1801 as regards the restrictions put upon herring-fishery by cod-fishing vessels.* The premiums decreed in 1802 were in the next years paid for the very few ships which ventured to sail; but the dread of British cruisers was generally stronger than the hope of a bounty. Matters became still worse under King Louis' reign, when Holland was virtually a province of France, and the Emperor, as omnipotent there as in the lands under his own direct government, kept the fishing fleet constantly in readiness as instruments for the one great plan he never could put into execution, viz., the descent on the British shores. A "Dutch Herring Company" was formed at London in 1809, for the purpose of cultivating the Dutch method of curage; and employed some captive Dutch herring-fishers, without, however, obtaining a durable success. The period when Holland was actually annexed to France (1810-1813) is remarkable in the history of Dutch sea-fisheries, not, of course, because of anything like prosperity for them, but because during this short period *the Dutch fishery-laws were cancelled*. As a consequence of this, coast fishermen, who alone could sail now and then with hope of escaping the British cruisers, used their new-gotten freedom to cure fresh-herring caught off the Dutch coast; and so good was the produce of their curage that dealers from Vlaardingen and Maassluis, whose busses could not sail to their accustomed rendezvous off the British shores, did not disdain to buy cured herring from the coast and sell it under their brands. The only instance of French sea-fishery legislation is an Imperial Decree of April 25th, 1812† by which the herring, cod, and fresh-fisheries were permitted, but under such rules as to

* *Notulen Staatsbewind*, May 22nd, 25th, 1803; April 22nd, 1805.

† *Bulletin de Lois de l'Empire Francais*, 4me série, vol. xvi. p. 373.

the duration of their absence from home, their obligation never to enter any port but their own, and always to rally there at an appointed signal, and the inspection of their vessels and men, as kept them constantly under the hand of the military and naval authorities, to be gathered at a moment's notice. It was the Emperor's object, not to secure for his subjects such freedom of sea-fishery as was not precluded by his disastrous wars, but merely to use their ships as instruments for the ever-proposed expedition against England. The fishery boards of the country were swept away, and the Decree of 1812 substituted for them a College of "*prud'hommes pêcheurs*" in each fishery port, whose main duty was to supervise the regulations relative to the well-known French "*inscription maritime*." The chiefs of the Imperial Navy, were by this law made the supreme ordainers of all fishermen's conduct, and the vessels employed in sea-fishery were considered in no other light than that of ferry-boats, to be kept handy eventually to land a French army across the Channel. And yet the whole of this military organization was set up under a pretence of consummate benevolence and liberality towards the fishing interests; for the 12th article of the above quoted Imperial Decree expressly stated that it was made, "*voulant dégager ceux de nos sujets qui s'adonnent à la pêche de toutes les entraves qui peuvent gêner leur industrie, et les éclairer des leçons de l'expérience !*"

CHAPTER II.

PROTECTION AT A CULMINATING POINT.

ON November 30th, 1813, the Prince of Orange crossed from England to take the hereditary government of the ex-Batavian Republic. On December 1st, he was proclaimed Sovereign Prince of the Netherlands at Amsterdam ; and one of his very first acts of economical legislation was to cancel all fishery laws of French origin and re-instate the herring law of 1801.*

The old system of fishery regulation and protection was further rebuilt in the next years. Premiums were held out to encourage a fresh beginning of the several fisheries, to the amount of fl.500 for every cure-herring buss equipped, for every vessel employed on cod-fishery in the North Sea during the winter months, and for every voyage made by a vessel in the Iceland cod-fishery ; of fl.200 for a fresh herring bum-boat, and fl.4000 for each of the first twelve whalers to sail in the next years, besides, as regards the latter, the "indemnification bounty" of fl.50 for each quarter of train wanting to a hundred, under the same conditions as to equipment, strength of crew, and duration of voyage, which had been enacted in 1788 and 1802.† In virtue of the latter premium, a whaler was entitled, if returning "clean," i.e. without any cargo, to no less a sum than fl.9000 as a bounty. The permission to send a few sale-hunters direct from the fleet to Germany, was also granted once more in

* Decree of January 10th, 1814 (*Staatsbl.* No. 6).

† *Staatsblad* 1815, Nos. 2, 27 ; 1816, No. 6 ; 1817, No. 3 ; 1818 Nos. 13, 42, 43. *Bijvoegsel op het Staatsblad*, 1818, p. 892.

1815;* and although this grant had been constantly made in the last years of the ancient Republic, the fiction of its exceptional character was upheld even now, and the permission was given for one year only, and renewed afterwards. The old exemption from excise duty on salt was likewise restored, for the benefit of all herring and cod fishery, by the law on salt excise duty of September 15th, 1816;† and a Decree of May 30th, 1817‡ besides establishing peculiar facilities for the enjoyment of this immunity, in the shape of credit for excise duty not subject to the common bonded warehouse rules, held out a special premium of fl. 3 per last of salt cod-fish brought into port, and a general bounty on exportation of salt cod or herring. Another decree, dated July 31st, 1817,§ established facilities of a similar nature for unrefined salt used free of excise duty by the North Sea coast fresh herring (or *steurharing*) fishery. In a word, no efforts were spared to promote a speedy rising of the national fisheries; and as the sea was now free, and national labour anxious to take avail of the withdrawal of the fetters imposed by foreign domination, the herring-fishery, and its corollary the North Sea cod-fishery, soon reached something approaching their status of the latter part of the former century.

Whaling was likewise attempted afresh, under the stimulus of the very important premium offered; but the attempts were timidly made, generally in old and wretched vessels, and the trade never regained anything like a rank worth mentioning among the Dutch sea-fisheries in the present century. A whaling company (limited) was chartered at

* *Staatsblad*, 1815, No. 34.

† *Ibid.* 1816, No. 36.

‡ *Bijvoegsel tot het Staatsblad*, 1817, p. 220.

§ *Ibid.* p. 236.

Harlingen in 1824,* the King being one of the principal participators. A similar company was formed at Rotterdam about the same time. Notwithstanding the very considerable amount of premiums awarded, I have not found any evidence of these whaling attempts having been successful; indeed the "*Nederlandsche Hermes*" of December 1826 distinctly states the contrary, and whaling was the only branch of Dutch sea-fishery which did not perceptibly survive the ruin of the ancient Republic.

Not content with restoring every detail of the ancient system of fishing regulation and protection, the Government of the Kingdom of the Netherlands soon began to out-Herod Herod, and add fresh fishery restrictions and monopolies to those made in former times. A minimum charter for herring busses allowed to cure and entitled to the premium of fl.500 was established, by a Decree of June 16th, 1815;† twenty-four lasts and thirteen men being prescribed as the minimum size and crew for such vessels. The same Decree contained a clause by which the Grand Fishery College's virtual power was very much extended, and it became indeed a matter of some difficulty to assign its exact limits. All laws whatever emanated on fisheries in former years, and aiming at the maintenance of the credit of Dutch herring were declared to continue in vigour, unless expressly repealed; and the publication of May 30th, 1800, against curing *Zuider Zee* "*panherring*," and importing foreign herring unless for re-exportation in the same

* *Bijvoegsel op het Staatsblad*, p. 612.

† *Staatsblad* No. 39. Although virtually a modification of the law of 1801, the enactment was disguised in the shape of a simple regulation prohibiting the College of the Grand Fishery from issuing licences for vessels not responding to it.

barrels, was expressly renewed. By this enactment the whole of the ancient herring legislation of the United Provinces was virtually re-established, although the essence of it had already been, so to say, crystallized in the law of 1801. It was not easy to apply the tangled mass of the old Republic's fishery laws to the modern kingdom, or indeed to make out what part of the countless Resolutions of the States-General and the States of Holland, on the subject, was still lawfully in vigour, and what part repealed. There was now, in short, *too much* general legislation on sea-fisheries; and a simplification was found necessary. To promote this end, without detriment to the principles of the existing laws, the King, on February 20th, 1818, laid a Bill before the States-General, the leading idea of which was to leave all detailed working rules to the provincial authorities, under Government approbation, and have only general precepts laid down in the law of the realm. This law, promulgated on March 12th, 1818, (Staatsblad No 15) was the last general statute regulating sea-fisheries in the Netherlands. It contained the leading principles of the system on which fishery protection was built, and its several clauses have been an object of much debate down to the final overthrow of the system in 1857. For these reasons I have found it expedient to add a translation of the full text of the law of 1818, as Appendix D. to these pages.

The law, as will be found upon perusal of the said Appendix, repeated the outlines of the system in vigour ever since the beginning of the ancient Republic, and described in Part II. Chapter I., of the present essay. It moreover contained one important novelty, viz., the utter prohibition from importing any foreign herring whatever, whether for transit or for home consumption. Both under the Republic and by the law of 1801, it had been permitted

to import foreign herring for re-exportation in the same barrels, un-opened and unbranded ; and the general Customs tariff of 1816 admitted such herring for home consumption, although subject to a heavy duty. Fish dealers in 1818 were, for the first time, utterly deprived of a branch of their business for the better preservation of the Grand Fishery's monopoly.

The law was not established without serious opposition. The importing prohibition just mentioned was, in the first place, the subject of a warm remonstrance in the Second Chamber, on the part of no less a personage than Count Hogendorp,* who found sufficient motive in Art. 6 to vote against the Bill, although favourably inclined towards it in general.† But the main brunt of antagonism was borne by the sixteenth clause of the law, by which the Grand Fishery's monopoly of curing herring after Beukelsz' ancient method was once more consecrated, to the exclusion of the fishermen of both the North Sea and Zuider Zee shores. This monopoly, which we have seen established in the eighteenth century by the potent Commissioners of the Grand Fishery, and maintained by the laws of 1800 and 1801, had already been expressly re-enforced by a special law dated November 25th, 1814 (Staatsblad No. 108). Of all the several items of protection to which the Grand Fishery had learned to cling for two centuries and more, they held this curing privilege the most precious. Fresh-herring fishermen, on the other hand, still considered their

* One of the illustrious men who led the revolt against the French authorities, some time before the arrival of the allied forces. This great and wise statesman has, throughout his career as such, advocated the principle of Free Trade.

† Hogendorp, *Bijdragen t.d. Huish. van Staat*, ii. p. 249. The entire debate upon the Bill is to be found in Mr. Noordziek's collection of *States-General Records*, 1817-18, p. 288.

exclusion as the main cause of their trade's insignificance, and took occasion from the general revision of the fishery statutes ordained in 1818 to strenuously claim the right to cure their herring. Their petition,* besides the arguments used by their fathers in 1751,† had now some still more stringent reasons as a base. Under the French Government in 1812 and 1813, fishermen from the Side were allowed to cure ; and as they of the Grand Fishery could not venture into their ordinary fishing waters, herring caught and cured by the despised bum-boats closer to the continental shore was carried to Maassluis and Vlaardingen, and those towns were then anxious enough to export it under the Grand Fishery brand.

The petition from the coast villages (viz., Scheveningen, Katwijk, Noordwijk, Egmond aan Zee and Zantvoort, the rest having meanwhile given up fishing), was this time echoed higher up than its predecessor in 1751 had been. Four sections out of the five into which the Second Chamber, or Lower House of the legislative body, was then divided for the preliminary examination of Bills brought in, desired more ample elucidation respecting the curing monopoly.‡ Government answered them with assertions either unfounded or not to the point. Firstly, it was said, the early herring which really constitutes the renown of the Dutch brands abroad is caught off the Shetlands, whither no keel-less boat can sail ; a statement in flat contradiction to the representations of the coast fishermen, who in their petition alleged the early herring caught off Shetland to be,

* Published as Appendix XIX. to the Report of the Committee on Sea-Fisheries, 1854.

† See part ii.

‡ See the Report of the Central Section, in *Bijvoegsel tot het Staatsblad*, 1818, p. 1006.

as a fact, unfit for exportation. Next, said the Minister in defence of the Bill, it is a requisite for first-rate cured-herring that the fish be cured quite fresh, whence buss-fishermen are enjoined to throw overboard in the morning all such herring of yesterday's capture as they have been unable to cure in the night ; and bum-boats, being much less strongly manned, could not carry out this point of the law with sufficient precision. To this argument it might have been objected that if bum-boats carried fewer hands, they also shot fewer nets, and had less fish to cure in one night. Subsequent events have fully proved that herring can be cured in bum-boats with entire success. Thirdly, Government argued that it had been enacted in 1801, that no vessel should sail home in the early part of the season unless with a full cargo ; and the smaller vessels, having sooner completed theirs, could have the immense privilege of the early market all to themselves if allowed to cure. The true reason for maintaining the monopoly, to wit, the preponderance of the Grand Fishery interest, peeped through this last argument ; and in preferring it, Government omitted to take into account the institution of sale-hunting, by which the first cured-herring was annually brought into port much earlier than a bum-boat could ever hope to make the shore with a complete cargo. Another pretended danger of allowing bum-boat fishers to cure, viz., that of their divulging the professional secret of curage in the ports of Great Britain, and Yarmouth especially, which they used to visit, was indeed altogether visionary. Keeled busses as well as bum-boats were in the habit of holding communication with the British shore ; and the danger of the former's crews promulgating abroad the mysteries of Dutch curage was much the greater. Bum-boats from the coast were all manned exclusively by Dutchmen ; whereas the greater

part of the busses' crews was, at the time now spoken of, composed of foreigners, Germans especially, whom nothing prevented from teaching their countrymen, or other foreigners, the process on which they were employed during the summer. If Dutch curage was not generally practised abroad, it was because other methods were used in foreign countries with such success as made English, Germans, Swedes, Danes and Norsemen the victorious competitors of the Dutch in the great herring markets, as early as the beginning of the present century.

The point at issue being so far elucidated on both sides in the Parliament papers, the oral discussion could not of course bring any fresh arguments into the field. Still it did not lack interest. The speech of Mr. Kemper, who employed himself most strenuously in defence of both the curing monopoly and the importing prohibition, is a fair specimen of the peculiar logic customary to protectionism. The first-named measure, according to Mr. Kemper, was in reality not a monopoly at all. Bum-boat owners were left perfectly at liberty to exchange their vessels for keeled busses, and take their share in the profits of curage. And so they certainly were, as far as the words of the law were concerned. But no keeled vessel could sail from, or anchor in safety at a convenient distance off one of the villages on the Dutch sea coast ; so in order to adopt the orator's advice, shipowners from the coast would have had to transfer their establishments to the riverside towns, and abandon the capital primarily sunk in their business, besides the many other expenses and disadvantages always attendant upon shifting the seat of an industry from one place to another. As coast-fishermen pithily said in their petition, their liberty to equip busses was equivalent to a merchant's liberty to sell certain wares, under an obligation

to pack those wares in bales too big to be got through his warehouse doors.

Yet another point of the Bill was forcibly illustrated in the course of the debate, viz., the King's faculty to allow dispensations from the prohibition to cure issued against coast fishermen. This clause was never meant for anything but a decoy to win the opposition over. The parliamentary system was at the time in its infancy in the Netherlands. There was no ministerial responsibility ; and to oppose a Bill emanating from the King himself was something awful, on which many members of the House did not care to venture so long as they could somehow keep their consciences at rest in acquiescing. To provide a sedative to this effect was therefore a means to shut up importunate mouths. One member distinctly stated his intention to vote for the law in the hope that the King would use his faculty to establish exceptions ; whereas, as he justly observed, the Bill's rejection would be the continuance of the laws of 1800 and 1801, by which the monopoly was sanctioned without any perspective of relaxation. It is probable that many members tacitly embraced the same course ; and it certainly was a clever piece of parliamentary tactics to make such members vote the continuation of a monopoly obnoxious to their views, by asking them to empower Government to overthrow its own handiwork and system. But such an overthrow was no part of the King's intentions. The Minister's speech in defence of the Bill has unfortunately been lost ; but it is more than probable that Mr. Kemper fully expressed the Government's views upon the subject, by stating that he did not look forward to any breach in the monopoly, and would rather have abandoned the reservation clause. This was straightforward speaking ; and the law having been voted by a majority of fifty-one to sixteen, coast fishermen had not many illusions left. Of the several

provincial regulations on herring-fishery subsequently issued under the Royal approbation, not one permitted coast-fishermen to cure until long after King William the First had ceased to reign ; and the privilege was thus maintained, which prevented them from making above fl.10 or fl.12 for a quantity of herring, to which their concurrents imparted by curage a value of fl.50 and sometimes more.

The details of the system, as regulated under the law of March 12th, 1818, fully responded to the legislators' rigorously conservative spirit in fishery matters. No change was at first made in those details. For four years and a half, in virtue of a Royal decree dated June 9th, 1818 (*Staatsblad*, No. 27), the working rules laid down in the law of 1801 were continued in vigour, while a new set was under consideration with the Provincial authorities, now appointed legislators, under the royal approval, for all such working details as were rather vaguely defined by the law of 1818 as "internal police" of the herring-fishery. "Provincial authorities," of course, meant those of the province of Holland, now, as in former centuries, the only one where herring-fishery was exercised on a considerable scale. On December 31st, 1822, the royal approbation was given to a set of rules drawn up by the Provincial States of Holland, relative to herring-fishery in their province.*

Two Regulations were made in 1822 ; one on the Grand and one on the Fresh-herring Fishery. They were mainly a repetition, in a more prolix wording, of such details of the law of 1801 as had not been transferred to the law of March 12th, 1818. Very little was added to the virtual contents of the statute ; and that little tended to make the rules even more stringent than before. A minimum size for herring busses had been determined in 1815 ; the provincial regulation added that such busses should carry

* *Bijvoegsel op het Staatsblad*, 1822, pp. 1018 *sqq.*, 1358 *sqq.*

square sails (*razeilen*). The law of 1801 had ordered every buss to carry forty nets ; the regulation of 1822 added the size of those nets for each voyage. The former statute prohibited cure-herring fishermen from salting herring in baskets ungutted (*steuren*), unless in urgent cases, when it should be impossible to cure the fish ; the latter made away with the exception, and prescribed all herring caught in a buss to be either cured (*kaken*) immediately or thrown over-board. Besides these, and a few more tightenings of the old fetters, the Regulations of 1822 offer one important new feature, viz., the institution of two distinct boards for the cure-herring, and fresh-herring fisheries. The former was to sit at the Hague and exercise exactly the dominion formerly held over the cured-herring business by the Committee for the Grand Fishery. The latter board was to meet at Katwijk, as the most centrally situated among the North Sea coast villages, and hold sway over the smoke-herring concern. As a novelty, the whole of the coast fisheries, including those for pan-herring and fresh fish in both the North Sea and Zuider Zee, and even shrimping, were brought under the supervision of the College assembling at Katwijk, who were enjoined to keep their eye upon these several branches of the trade, and from time to time to draw up the necessary regulations regarding them for the Provincial States' approval. Last-money was to be levied by both colleges under similar provisions as made in 1801 for the committee's sole benefit ; and the forms of oath, instructions for steersmen, and hospital-ship captains, &c., &c., ordained in 1801, were renewed in pretty much the same words.

Another novelty of some importance in the Grand Fishery Regulation of 1822 is, that it first gives a legal definition of the several qualities of Dutch cured-herring, viz., *full*, *maatjes*, *ijlen*, and *kuitziek* (*homsiek*). The former

and latter terms had indeed been used from very early times downward, the former meaning herring full of spawn or milt, and the latter fish about to shoot the same, and consequently unfit to be preserved for a long time "*Ylen*" is a common word for lean, or empty, and was applied to herring, in its literal sense, down from old times. The word *maatjes* first occurs, without any positive statement as to its meaning, in the 14th clause of the Herring Placard of 1656. The Regulation of 1822 defines this very important description of cured-herring as containing neither milt nor spawn, but much fat, and "*maatjes*" herring is stated to be a great delicacy, but not very durable. The "*maatjes*" and "*ylen*" qualities were formerly certified on board by the skipper, by means of "*girdings*" or circles drawn round the barrels. Positive *brands* for them, to be given of course ashore by the brander, are first prescribed in the Regulation of 1822, besides the old brands stating the season of catch and described in Part II., Chap. I.

Besides the aforesaid regulations, a Royal Decree of April 4th, 1824 (*Staatsblad*, No. 28), extended the clause of 1818, forbidding Dutchmen to fish "between the rocks of Scotland, Hitland, and Norway." They were now prohibited from fishing, or even without urgent reasons from approaching, within two hours (twenty making a degree) of the British shores. The main object of this statute appears to have been to stop Dutchmen smuggling on the British coast; but as cure-herring fishery off "Hitland," Fairhill, and Yarmouth, and all fresh-herring fishery, were expressly dispensed from the rule, it is not easy to see what can have been its real force at the outset. It was carried into full effect, and the exceptions were withdrawn, by a new regulation on cure-herring fishery enacted by the Provincial States of Holland in 1826, and approved by Royal Decree

of June 5th, 1827,* which regulation did not otherwise materially alter the existing rules.

The edifice of legislation on herring fishery was now more complete than ever. Its base, construction, and general outlines still responded to the Placards of 1582; and the only material alterations wrought since then were such *novellae* as had been, in the course of two centuries and a half, invented by the ingenuity of many generations of fishermen, the better to secure their several monopolies against home and foreign competition. As regards the former, the rules now as formerly proved efficient enough. As for the latter, no laws or monopolies had in former days shielded Dutch fishermen from the effects of war, or of elevated tariffs and active concurrency abroad; nor could they now, under profound and continual peace and industrial activity, make the Grand Fishery regain anything of its splendour of a hundred and fifty years ago.

But the spirit of monopoly had not yet done its utmost. The narrow-minded greed of parties interested had still more stringent measures of Protection in store. Before speaking of these it will be necessary to relate how the herring fishery fared between 1814 and the time of which I am now speaking.

About one hundred busses sailed in 1814; and as herring prices were very high in the next two years, and premiums, as has been shown, were lavishly given, enormous gains were made. The returns of one season sometimes amounted to fl.10,000 per vessel, besides the bounty.† An organization of the sale-hunting business was agreed upon during this period of success, in

* *Staatscourant*, 1827, No. 278 (Bijvoegsel).

† See a Memorial on a Herring Association, written in 1828. (*Notulen Holland*, 1829, p. 211.)

virtue of which cure-herring shipowners annually clubbed to equip sale-hunters, and each buss, while at sea, sold her early herring to these for a price fixed beforehand. The much higher prices made in the home market for this "hunted herring" (*Faag-haring*) were then divided among the participators in the "Hunting Association" (*Fagery-vereeniging*), according to the number of barrels sold to the hunters by each buss; and a managing Committee of shipowners regulated the sale and expedition of the early herring so as to prevent an overstocking of the market and a downfall of prices early in the season.* Under the very favourable circumstances mentioned just now the number of the vessels of course increased fast, and reached 160 in 1817. A series of exceptionally bad years, during which the catch was very scanty, and most busses "sailed money overboard," notwithstanding tolerable prices, reduced the number of busses to 145 in 1821. In the said year a shipowning company established at Emden transferred its fleet of twenty-five busses to Enkhuizen and carried the total of the Dutch fleet up to 170. Fishing returns in 1821 were once more plentiful; but prices went down to an extremely low level, mainly on account of the competition of Scotch herring in the foreign markets; and several firms were in jeopardy. At this juncture, a herring dealer from Amsterdam, in the spring of 1822, proposed a measure which, being adopted by the principal shipowners of the towns on the Maas, led to some amelioration of prices. They agreed not to sell herring under fl.17 a barrel before October 15th, whereas fl.10 had been paid in the preceding year. This was a considerable extension of

* After steam navigation had come in, the Dutch Government annually supplied a steamer to the Hunting Association to act as the first "sale-hunter."

the principle on which the Hunting Association used to act; for the former did not meddle with prices after the close of hunting time, generally July 15th, and left competition in the market entirely free at all times beyond the first three weeks of the season. The measure was repeated in 1823, and by it prices on the Dutch market were indeed kept at fl.17 or upwards, but three hundred lasts* of herring remained unsold in the winter of 1823, and had to be thrown on the market for fl.8 in the next spring, before the opening of the season 1824. A "Herring Company of Amsterdam" (*"Amsterdamsche Haringveedery"*) was created and chartered in the said year, in the hope of exploiting the fixity of prices caused in the two preceding years by the general association of shipowners. But such an association was not again formed, as its results had upon the whole proved unsatisfactory, and some doubts had arisen as to the faithful observation of the contract by many of the participators. Meanwhile prices went down again; and in 1825, although the bounty of fl.500 was carried to fl.750, most shipowners sustained severe losses, which in that and the next three years were shared by the Amsterdam Company, based on an unfulfilled expectation. The cause of these losses might have been manifest to any unprejudiced observer. Scotch, German, and Norse herring was now prevalent in most of the European markets. Herring had become an article of common nourishment in some countries, by reason of its cheapness, the result of vastly increased international competition. In order to sell a fair quantity of herring it was now necessary to catch it at little expense and sell it

* The "last" of herring at this time and afterwards was a quantity of 14 barrels; the barrel contained on an average 800 herrings. In former centuries the "last" averaged from 12 to 14 barrels.

cheap ; and the Dutch herring laws, instead of pointing out the way to cheap production, were based on the bicentennial principle that Dutch cured herring was to be, not an article of daily food, but a delicious, and of course expensive, luxury. The legislation had been built up in a time when the Dutch were, if not the only, at least by very far the greatest herring-fishers of the world, and enabled by the absence of serious competition to put their own prices upon their own brands. Thus the notions of Herring and Monopoly had for centuries been closely interwoven in the Dutchman's mind ; and he was not able to disentangle those notions, even when foreigners began to go far ahead of Holland in competition upon the herring markets. Other countries at the same time retaliated on Holland for her former ascendancy and present exclusive policy, by closing their markets against Dutch herring by heavy customs duties. This state of things had not been realised in the course of the eighteenth century ; whence the continued downfall of the Dutch herring fisheries, in spite of premiums and regulations without number. It was not realised in the first part of the present century ; whence the impossibility of keeping up competition abroad. Nor could home consumption, being curtailed by prices artificially high, sustain the business even under a prohibition of foreign herring. Herring Protection, more than two centuries old, had been bringing down its own punishment for one century or more ; and yet nobody saw the evident effects of the great social law against which they had been striving in vain.

As a very conclusive instance of this blindness, the "*Amsterdamsche Haringreedery*" before mentioned in 1828 presented a petition to the King, which, though not fully carried out, led to a very masterpiece of monopolising

policy. They asked that, by the abolition of clause 46 of the Herring Regulations for the province of Holland, it should be made lawful for every buss to transfer herring to every other, during the whole of the season ; and that the whole of the fishery should then be formed into one Association, whose committee should at all times determine a minimum price for the last of herrings, and regulate the sale so as to keep up that price. The accession of all shipowners to this association, and their submission to its rules, they required to be enforced by depriving all outsiders of the premium of 500 florins, and dividing the sums which would have been due to them as premiums between the members of the Association, whose premiums might thereby exceed the former amount.

The arguments preferred for this plan by those who moved it were the following. As things were under the Provincial Regulation of 1827, herring might only be transferred to the licensed sale-hunters between June 24th, or the opening of the season, and July 15th ; and the large supply of herring during this "hunting-time" (*jaagtyd*) was apt, in spite of the monopoly of "hunted herring" in the home markets secured by the prohibition against busses sailing home unless with a full cargo, to drive prices down to a level insufficient for that precious delicacy, the noble early Dutch cured herring. After the close of "hunting time," i.e. when it was no longer permitted to transfer herring from one ship to another, a scarcity of herring frequently set in, for it was manifestly contrary to the shipowners' interest to have their ships home, and stop fishing for a couple of weeks, unless the necessity of bringing in a complete cargo compelled them to do so. Thus, in consequence of the "hunting" monopoly and its restricted time of operation, many lasts of prime herring remained

afloat and lost their freshness, while foreign orders upon the Dutch market could not be executed for lack of adequate supplies. Prices unnaturally low were thus succeeded by prices unnaturally high, or rather by a grievous understocking of the market. As a fact, this arrangement was certainly a monument of stolidity in economical legislation. But the remedy proposed by the men of Amsterdam was little better. They wanted, indeed, to have herring-hunting free throughout the season, but only in order to have all the herring brought in confided to the care of one central committee, who should limit the sale so as never to severely depress the market. They wanted, in a word, to monopolise into one single hand the whole of a trade already monopolised for the benefit of those few who could afford keeled and square-rigged vessels. While the law limited the cure-herring fishery to comparatively few ships, they wanted to limit the marketable production of those ships to such quantities as should suit the convenience of a body of narrow-minded ship-owners and dealers, anxious, not to sell much fish, but only to make a high figure for such fish as they could manage to sell. The main end of the plan was, *not to extend, but to restrict the business.*

There has been a vast amount of written and oral discussion of this plan. The permanent Committee of the Provincial States,* before whom the matter was laid, called a meeting of parties concerned at Lisse, and had heaps of memorials presented to them, both before and after that meeting. The College of the Grand Fishery for Holland was then, as in former times, divided into two Chambers or "Departments," one for Amsterdam and the towns in North Holland, and one for the towns on the Maas; and

* *Gedeputeerde Staten.*

of these Departments the former sided for the plan proposed by the "*Amsterdamsche Haringreederij*," and the latter opposed it in the most strenuous terms. Of all the clamouring parties in the debate, this latter official Board was the only one which showed discernment, by starting from the premise that "not high prices, but abundant capture, were the means to restore the Grand Fishery." But even they were anything but faithful to their principle, and indeed disavowed it wofully in some of their subsequent reasonings. One of their objections to the plan of Amsterdam was, that if the "hunting" monopoly were removed, and all and sundry left free to carry home herring at any time, prices, now in some measure kept up till July 15th by the Hunting Association (*Jagery-Vereeniging*), would be frightfully depressed from the very beginning of each season.

Volumes of memorials were, as said before, written for and against the Amsterdam plan.* The numeric majority was against it; for the whole of the shipowners' companies and herring firms on the Maas of course took the side of the southern department of the College. Still the argument of Amsterdam prevailed in part. Having to suggest a decision to the King, the Provincial States determined upon a plan for conciliating the views of both parties, which was perhaps the worst solution they could possibly have contrived. By their advice, the King in 1829† maintained the 46th clause of the Regulation, but authorised the Provincial States to postpone the closing of the "hunting"

* The whole of the documents are preserved in the record-books (*Notulen*) of the Provincial States of Holland, 1828, p. 102, *seqq.*, and 1829, p. 180, *seqq.* They form about a hundred pages of folio print.

† Decree of May 5th, 1829 (*Bijvoegsel op het Staatsblad*, vol. xvi. p. 14).

season till a later date than July 15th. On the other hand, the new monopoly sued for by Amsterdam was granted by this Decree, and premiums were withheld (although without accretion to others) from all such herring shipowners as should decline to accede to a universal Association, since famous under the name of "*Vereeniging der Zoutharing-reederijen*." The constitutive rules for this Association were shortly afterwards drawn up by a committee of dealers and shipowners, and approved by the Provincial States.* Four local Boards, residing at Vlaardingen, Maassluis, Amsterdam and Enkhuizen, were appointed by the herring shipowners, each buss conferring a vote on her owner. These boards were to buy up *all* branded herring brought in by the partners, and sell it out again ; the prices for both purchase and sale being fixed, from day to day, by a central Board residing at Vlaardingen, "to the furtherance of the shipowners' interest, by preventing *unnecessary* depression of prices, and on the other hand, moderating them so as to leave no herring *unnecessarily* unsold." The Board, though a wholesale and monopolist dealer, was not to export directly, but sell to second-hand inland dealers only ; and all herring left unsold on April 1st of any year was to be sold in auction at any price, and the returns recovered before May 1st. As herring kept till April 1st of the year succeeding its capture is comparatively worthless, this fresh monopoly was equivalent to throwing away part of the herring caught, in order to enhance the price of the rest. The measure was just the reverse of what ought to have been done. The only chance of upholding the herring business, even under the laws which bound it down, lay in altogether removing the preposterous "hunting" monopoly and restriction, and leaving the supply of the

* *Bijvoegsel op het Staatsblad*, vol. xvi, p. 16.

article to regulate itself ; whereas Government now proceeded to cap the measure by having the sale monopolised and restricted likewise. The regulation and protection system, as applied to herring fishery, was now screwed up to its very acme. A cure-herring fisherman was not much beyond a machine as regards the management of his business. He was accurately prescribed how, in what vessels, with what nets, when, and where to fish ; how to prepare his fish ; how, when, and in what vessels to convey it home ; and he was obliged to let others decide for him whether, when, and at what prices it was to be sold. He had not the slightest liberty of action ; a knowledge of his business, of prices, markets, &c., was unnecessary for him ; and he would have been fined large sums had he tried to improve his business by any technical innovation. Anybody could, so to say, be a herring shipowner, if he had a knowledge of the several regulations of which the above chapters contain a brief, and far from detailed, account. It is a marvel that a trade should have lingered so long, in which all vitality and spirit of enterprise was so utterly extinguished by regulations ; the more so as the avowed object of some of these regulations was, not to extend, but to restrict the business. Of this baleful policy of directly and *openly* keeping back part of the supply of an article in order to enhance its market price, the history of the Netherlands in former centuries can show more instances than one ; but I doubt whether in the present century there is an example of such a thing applied to *food*.

As regards the principle, the Dutch fish monopolies were decidedly worse than the British Corn Laws ; and the reason why the latter affected the general welfare much more seriously is merely that they were applied to an article without which no one could do. Nor was the revival of

Government regulation under the reign of King William the First limited to the herring fisheries. Coast fishery for plaice, flounder, sole, &c., shared the general reinforcement of old rules, and close attention to their observation. Laws against trawling, for the protection of fish-life under the Dutch coast had, as related in a former part of this work, been enacted in 1676 and relinquished in 1689, as unnecessary vexations. A statute of this nature was once more set up by Royal decree dated January 12th, 1820.* Trawling was not prohibited altogether by this edict; but it was forbidden to trawl within view of the coast in November, December, and January, and at any time to use trawls or any other nets narrower than the "eight-and-twenty" size of old, i.e. a width of three (Netherlands) inches and nine-tenths, or about one inch (English) and a-half, for each mesh. Another decree of November 15th, 1825, † prescribed that the reglet, or spatule (*spaan*) determining the meshes' width of nets for the coast fishery should be made of copper, and subject to assay. The use of trawls for fishing herring along the coast was altogether prohibited by this Edict of 1825; but, at the same time, the general prohibition of all trawling was limited to the period between November 15th and February 15th. The latter date was afterwards shifted to February 1st by Decree of August 29th, 1837 (*Staatsblad* No. 56). It is worthy of note that the Decree of 1825 was only enacted for the province of Holland, whose States held it to be necessary; whereas the provinces of Antwerp, Zealand, and Occidental Flanders, ‡ whose inhabitants, like those of Holland, exer-

* *Staatsblad*, No. 2.

† *Staatsblad*, No. 75.

‡ It should be remembered that, from 1815 till 1830, the provinces now forming the kingdom of Belgium were part of the kingdom of the Netherlands.

cised coast fishery on the North Sea shores, declined to have them enforced within their precincts. The States of these three provinces were so anxious to maintain their fishers' liberty in the choice of their gear that they bought it by the loss of a considerable advantage. A premium of fl.250 was held out, by the Decree of 1825, to every boat from the province of Holland (bumboats included) which should fish in the North Sea with hooks and lines,* without interruption, between November 15th and February 15th of any subsequent year. As this premium was not limited to any definite number of years, it afforded considerable encouragement to the coast-fishery of Holland; and yet the southern provinces chose to forego this benefit in order to maintain their right to use the trawl.

The premium awarded in 1825 to hook-and-line-fishery during winter was by no means a superfluous bounty. Hook-and-line fishery was, upon the whole, a good substitute for winter trawling. Plaice, turbot, &c., besides cod and haddock, were caught on the hooks; whence, though trawling was the more convenient, and it would appear the cheaper of the two methods, the other offered better chances of a fair return. But this was not the only consideration. Trawling was till then the coast-fishers' chief, if not their only, source of livelihood in winter, after the close of the smoke-herring business; and, being forbidden to use the trawl, they were, in common equity, entitled to some equivalent to keep them from starving. I have shown in former chapters that severe penury used to prevail in the coast villages during winter; and the premium for hook-and-line fishery during prohibited trawling time was, at the outset, a preventive measure against over-burdening of the Poor Boards. It soon wrought a considerable increase of

* "*Beng- of hoekwant.*"

the hook-fishery by bumboats in winter, and even in autumn and summer, and subsequently occasioned a curious incident in the race for premiums characteristic of Dutch sea-fisheries between 1775 and 1850. Fresh-herring or "stcurharing" fishermen, who had only fl.200 a year as a premium, began to desert their business for the more favoured hook-fishery; and the owners of herring smokerics in the coast villages complained of a scarcity of herring supplies to their establishments. The premium for "stcurharing" fishery was therefore augmented to fl.300 per boat, by Decree of July 11th 1835, No. 72; whereupon a shifting in the opposite direction took place, and hook-fishers from the coast turned fresh-herring fishers to such an extent that the municipality of the Hague complained of their market being under-stocked with fresh haddock and plaice. A sliding scale of premiums was now adopted; and it was enacted by Decree of November 6th, 1840 (Staatsblad No. 71), that such of the two rival fisheries as should have the greater number of boats engaged in it in any year should in the next be entitled to the premium of fl.250, and the other to the full bounty of fl.300.

Besides the prohibition from trawling in the winter months, another measure for the preservation of fish-life along the coasts was taken in 1842. It will be remembered that the use, within the sand-bars, of the shrimp trawl, known in the Placards of the seventeenth century by the name of "sayngh" had been permitted at all times by those enactments, while they prohibited trawling at greater depth and distance. The several laws and Decrees of 1820 and following years had likewise left the use of the "saaycm" (as the implement was now styled) unrestricted. But it was now discovered that, although the spawn of plaice, &c., was supposed to be deposited on the bottom at some distance

from the coast, immense shoals of fry of such fish, quite unfit for consumption, sometimes approached so near the shore as to be caught in the shrimpers' nets, when they were either thrown away or used as pigs' food or manure. It was deemed advisable, as a supplement to the law on trawling, to prevent such waste of the fisherman's future stock ; and towards this end it was enacted that, whenever a shrimp-boat should find more than one-eighth of the contents of his "saayem" to consist of fry, or unripe fish, he should report the fact to the member of the Coast Fishery College or to the municipal officer nearest at hand ; when all use of the shrimp-trawl should instantly be prohibited in the locality for eight days.* An estimate of the utility of this measure cannot be formed, for the prohibition was not applied above a few times, and the statute was repealed in 1857. But there is little or no probability of it having, till then, been faithfully observed. It was of course impossible to efficiently control the shrimpers' nets ; and they were interested, if finding a quantity of fry of fish in those nets, in concealing the fact in order to avoid a compulsory holiday of a week or more.

CHAPTER III.

THE END OF PROTECTION.

THE present narrative has now come to a turning-point, viz. the period when the ancient system of sea-fishery legislation was abandoned, as inadequate to the *régime* of modern production and exchange. Before entering upon the details of the system's overthrow, it may be useful to resume its plan and outlines in a very few words.

* Royal Decree, January 7th, 1842 (*Staatsblad* No. 2)

There were no less than three monopolies in the Grand Fishery, or business of fishing for herring to be gutted and salted on board as soon as caught (*kaken*) ; to wit :

Firstly, the *fishing and curing monopoly*, restricting the business to those who owned keeled and square-rigged vessels ; forbidding them to fish unless between June 24th and January 1st, or carry fish elsewhere than into Dutch ports ; and subjecting fish, barrels, and fishing implements to obligatory and strict assay.

Secondly, the *carrying monopoly*, restricting the liberty to buy cure-herring at sea and carry it home to the earlier part of the season, and virtually monopolising the supply of herring, during that part of the season, in the hands of the body called "*Vereeniging van de Haringjagery*," by an enactment prohibiting fishing busses from sailing home during "hunting time," unless with a full cargo.

Thirdly, the *selling monopoly*, empowering a wholesale-dealing corporation called "*Vereeniging van Zoutharing-reederyen*," during the whole of the season to determine the quantity of cure-herring to be thrown on the market, and the price to be put upon it. In order to enforce adhesion to the rules established by this corporation, premiums were only granted to such buss-owners as were partners in it.

To make up for the first-named monopoly, the owners of vessels excluded from it were invested with a monopoly of the curing process called "*steuren*," i.e. salting herring ungutted, preparatory to curage by smoke. But they were prohibited from fishing for herring and preparing it in this way until the beginning of autumn, when the other branch, or "Grand Fishery," was no longer exercised on a large scale.

All herring fishery, including the cured, the smoked, and the fresh, or "pan-herring" business, was protected by a

prohibition from importing any herring caught by foreigners, or by Customs duties amounting to such a prohibition.

All sea-fisheries, including, besides those just named, those of whale, cod, flounder, plaice, &c., were encouraged by bounties more or less considerable.

It will be noticed that this system, whatever its faults, was in its kind a well-ordained and finished organization. Its main parts completed each other so that no single stone of the building could be removed without endangering the whole. The curing monopoly of the Grand Fishery, and the smoking monopoly of the coast fishery, made the prohibition from importing herring an absolute necessity, it being impossible to let foreigners import articles which some or most natives were forbidden to produce. Again, the importing prohibition necessitated obligatory assay of brand-herring; for it would have been impossible to prevent foreign cured-herring from being imported if Dutch fishermen had bought it at sea, which they would have done, in spite of the legal prohibition, if obligatory assays at home had not made detection highly probable. Next, Dutch fisheries being thus prevented, by a complete set of legislative trammels, from following their natural course of development and effectually facing the overwhelming competition of English, Germans, and Norsemens, they could not of course go without direct government assistance, and would have altogether ceased to exist if their losses had not been covered by premiums.

Finally, as the whole of the system was pointed towards the main object of *maintaining Dutch cured-herring as a fine and expensive delicacy*, and as this object was still aimed at when the delicacy ceased to be in great demand abroad, there could of course be but one chance of selling Dutch herring at high figures, and that chance lay in restricting

the supplies. Thus, no considerable *item* could be missed out of the system ; and if the public's eye should once be thoroughly opened to the evils of one part, it must of a necessity open to the wrongs of the whole.

We have now to consider the effects of the system of which a sketch is given above, in the short period between its reaching the highest degree of perfection, and its final break-down. For a summary view of those effects, I beg to refer the reader to the statistical tables contained in Appendices E, F, G, H, and I. The leading fact at once apparent from the first three of these, is : *that the Grand Fishery, to whose interests the other branches of herring-fishery were sacrificed, languished and decreased under extreme protection and regulation ; whereas the smoke-herring fishery, being free in its own sphere of action, increased rapidly, although the law precluded its produce from being prepared to advantage.*

Next, it will be seen from Table G, that from 1845 downward, *the greater part of the herring caught by Dutchmen, was prevented from being cured, or prepared to advantage, in order to keep up the prices of the lesser part.*

Exports of herring of course followed a course analogous to that of production. Cured-herring exports remained stationary, being prevented from increasing, firstly, by the artificial dearth of the article and the lower prices of foreign herring, and secondly by the elevated customs tariffs against Dutch fish in most foreign countries, the inevitable consequence of the prohibitive measures against foreign herring in Holland. Smoked-herring, or "*bucking*," being a cheap article, and fit for a poor man's food, was better able to withstand these duties, and its exports actually increased, though not in proportion to its pro-

duction.* As regards the operations of the Salt-herring Shipowners' Association, or "*Vereeniging van Zoutharing-reederijen*" before alluded to, this corporation did in two ways contribute to keep Dutch brand-herring at high prices. Firstly, it limited the supply in the markets as soon as a tendency to fall became manifest. Secondly, it greatly enhanced the cost of production of the article as delivered to dealers. The association's expenses of management, warehousing, &c., were excessively high, so as often to swallow up the whole of the premium, and make it the shipowner's interest to forego the bounty and keep free of the association. Most shipowners indeed kept within the latter, but mainly, it would appear, because the association in course of time acted not only as their sole client but their banker, and embarked in credit operations entirely alien to its primitive sphere of action.†

Of the other branches of sea-fishery little need be said during the period now under consideration. Whaling was extinct, or very nearly so, and when mentioned at all in the writings of the period, is spoken of as a trade lost to the country. The somewhat reckless enterprise of the African Whaling Company had been wrecked long ago, during the English war. Of the several whaling companies started within a few years from the renewal of premiums in 1815, the greater part liquidated shortly afterwards. One corporation, of which King William I., a strenuous promoter of all national industries, was a shareholder, continued to work two old whaling vessels until a much

* *Vide* Appendix xxii. and xxiii. to the Report of the Committee on Sea-Fisheries, 1854. I have refrained from reproducing these, and other interesting statistical documents, in order not unnecessarily to extend the volume of this work.

† Report of the Committee on Sea-Fisheries, 1854, p. 199.

later period ; but the results were very unsatisfactory, and the vessels took out of the country's pocket in premiums some four-fifths of the total value they brought into it in blubber and whalebone. Such was the effect of the "indemnification" bounty before mentioned, which was paid to whalers, not for the fish they caught, but for those they failed to catch.*

Iceland cod-fishery also continued in a state of extreme insignificance,† having never recovered the effects of the prohibitive duties on salt cod and haddock levied in foreign countries, in the latter part of the eighteenth century.‡ Hook-fishery in the North Sea continued to be of importance, as a complement of the several herring-fisheries.

This branch of sea-fisheries, as to which I have not succeeded in finding sufficient information at earlier periods, at the time now spoken of bore something of an universal character. It was exercised in herring-busses or "hookers," in sloops, and in bum-boats. Herring-fishers of all descriptions made hooking their business at times when nature provided no herring, or law forbade to catch it. Most or all herring-busses used to go for cod and plaice in spring, and continue the business till the end of May or the first days of June, when the time came to prepare for the first herring voyage. The lines used in this early hook-fishery were made out of a peculiar kind of hemp named *kol*; whence this branch of hook-fishery was commonly called *kolvaart*, and a hooking voyage arranged so as to be back in time to equip the vessel for the cure-herring season took the name of *kolreis*. Besides, some

* See Minister Thorbecke's speech on premiums in the Second Chamber, on December 21st, 1850.

† See Appendix H.

‡ See part ii. chap. iii.

herring-ships fished for cod in winter, using a gear of somewhat different description called *beug*; whence the business was called *beugvaart*. Hook-fishery was thus a resource for all herring-fishers to keep their capital constantly in activity; and the concern was the more profitable, as several kinds of fish (cod, haddock, plaice, &c.) were caught on the hooks, and an abundance of one sometimes made up for a scarcity of another. I have not found any separate and complete accounts of hook-fishery by busses during the period now spoken of.* But whatever its actual importance, it certainly served to keep busses afloat at times when market restrictions could not squeeze a profit out of the herring returns, nor premiums cover herring losses; and it will be observed that this precious resource in all seasons and for all fishermen was solely due to the fact that, beyond a few restrictions as to herring caught by cod-fishers, which have been spoken of above, *there was no legislation on hook-fishery*. And even these restrictions served to show the futility of the herring laws. Hook-fishers were allowed to cure herring caught by them after the 15th of July; but in order to prevent any dangerous competition for the Grand Fishery, they were enjoined to pack their herring as "mixed" (*ongezonderd*), sell it *in open barrels*, and have it branded with a peculiar mark.† In spite of these several disadvantages, and, so to speak, marks of infamy, it is fully proved that herring of this

* The importance of winter hook-fishery on the Dogger bank (*beugvaart*) is shown by Appendix I.

† The mark consisted in the word "*kerf*." North sea hook-fishers were called *kervers* (or, in former centuries, *corvers*), from the customary carving of haddock and flat-fish; whence herring cured by them, although it was not apparently submitted to any other carving than consistent with the common method of curage, used to be called *kerfsharing*.

description brought to market by coast-fishermen from Katwijk did, about 1850, *fetch the same prices* as regular brand-herring sold at the same time.* It could not be better proved that the vaunted superiority of herring caught by busses over herring caught by bum-boats, and the latter's unfitness for any curage unless by smoke, were either fictions or rules fraught with many exceptions ; a fact as to which the experience of later years has not left the shadow of a doubt.

Of fresh-fishery I have not found any peculiar account during the period now spoken of. It was, indeed, no longer a separate business, being exercised by bum-boats of the North Sea coast, concurrently with hook and smoke-herring fishery, and especially at seasons when the latter was not permitted ; and all the year round, by a multitude of small craft of various descriptions, in river-mouths of Holland and Zealand, and in the Zuider Zee. The trawl was the fresh-fisher's favourite implement in the North Sea during the months when its use was not prohibited. The capture of *anchovy*, of which I have found scarcely any positive mention made in earlier times, became an industry of some importance in the first half of the present century, when the Zuider Zee was especially its area, and it was commonly carried on with a net of conic shape, and of course very narrow, dragged between two ships ; probably the same practice which we have seen prohibited in the latter part of the 18th century. Anchovy-fishery has always been subject to strong vicissitudes, and often gave rise to reckless speculation on future fishing returns. Thus, the annual quantity of anchovies brought to market at Monnickendam between 1847 and 1853 averaged about

* Report of the Committee on Sea-Fisheries, 1854, p. 90.

forty million ; but it was sixty-eight million in 1851, and little more than one million in the next year.

I have now briefly to narrate why and how the system of sea-fishery regulation and protection was relinquished.

The main cause of this most important reform was the fact that rational notions on political economy began to prevail in the Netherlands in the second quarter of the present century, especially after the secession of the Belgian provinces in 1830. It was between 1830 and 1850 that Free Trade was decidedly adopted as the base of the kingdom's commercial policy ; and to its adherents nothing could be more objectionable than sea-fishery protection in its actual form. The evils of monopoly, and the folly of paying bounties out of the public funds to encourage an industry while keeping it down by rules, began now to be fully realised, and public opinion, led by able writers in periodicals, gradually turned away from the system. It did indeed continue after most other items of protection had been abandoned ; and the main reason of this is, that the public at large were still kept in a state of excitement by wonderful accounts of the herring fishery's ancient greatness, and taught to believe that this greatness had been attained by similar protective measures as were now in force ; whereas I have shown *that the principal, and most stringent of those measures were invented long after the fisheries' decay had begun.* But this was not known at the time now spoken of. Whenever the subject was broached, writers and speakers in the fishery interest used to declaim out of Semeyns' and Raleigh's tales of wonder, and to take it for granted that those splendours, in which they still believed implicitly, were owing to our ancestors having done as we did now. The curious cry of "Try not to be wiser than thy fathers" was never raised with a more bois-

terous obstinacy than it was in matters of sea-fishery, as soon as modern ideas began to prevail in the question.

Considerable light was thrown on the subject in 1842, when Belgium increased its import duties on foreign fish, to the prejudice of Dutch sea-fisheries; and fishing ship-owners loudly clamoured for more efficient protection. The public mind was then strongly turned towards the question of fishery protection; and it became apparent that *it was impossible to allow the several fisheries more protection than they enjoyed*; while at the same time that naked fact, that *the branches most strongly protected declined in spite of protection*, was urged on the public's notice. The measures proposed by the writers in the fishery interest were to augment premiums, which expedient the Treasury interest forbade to adopt, and to retaliate on Belgium by elevating the duties, not on their fish, which was prohibited as it was, but on sundry other articles imported from the former southern provinces. The duties in Belgium were reduced some years afterwards. But, in the meantime, the brisk interchange of pamphlets and leading articles occasioned in 1842 by the Belgian protective measure, had the result of bringing the subject of sea-fishery legislation in its full extent before the Dutch public's eye.

A breach in the system, however, was not made till 1846; and it was not then a wound in a vital part. It was reported by the Grand Fishery Committee in Holland, that in 1845 herring entirely ripe had been caught by Scotch fishermen some time before the consecrated opening of the Dutch cure-herring fishery, so that the produce of the latter was late in the market, much to the shipowners' and dealers' detriment. A Bill was brought in, and passed without opposition, by which Government was empowered to anticipate the opening date of the Grand Fishery by a

period not exceeding a fortnight, i.e. fix it at any day between June 10th and 24th. The power was granted for two years, but renewed for three more in 1848; and the anticipation term was extended to twenty-three days in 1851 and 1854. Under these laws, the date on which the first casting of herring-nets should be permitted was fixed by Government on June 10th in the years 1846-50, and on June 1st in the years 1851-55.* The measure was not attended by any decided success. The first experiments of early fishing were indeed successful; but in nearly all the following years the results were unsatisfactory, and most shipowners returned to the observation of the ancient St. John's Day rule, finding the returns of early fishing did not cover the additional expenses necessitated by it, or compensate the disadvantage of having to quit the spring hook-fishery, or *kolvaart*, at an early date, whereas that business was generally most profitable in the latter part of May. The advisability of early fishing for cure-herring was a point of pretty constant debate in the course of the above-named years; shipowners generally advising to observe St. John's Day rule, in spite of the concurrence by early Scotch herring, and dealers urging early voyages because of that concurrence. Now dealers, although represented both in the College for the Grand Fishery and in the Salt-herring Shipowners' Association, were in a minority in both Boards; and consequently the College, after a few years' trial, advised against

* Laws of May 9th, 1846 (*Stbl.* No. 35); May 18th, 1848 (*Stbl.* No. 21); May 2nd, 1851 (*Stbl.* No. 23); and April 10th, 1854 (*Stbl.* No. 21). Decrees executive of these several laws, of May 12th, 1846 (*Stbl.* No. 41); May 19th, 1848 (*Stbl.* No. 24); May 8th, 1851 (*Stbl.* No. 51); May 3rd, 1852 (*Stbl.* No. 21); April 28th, 1853 (*Stbl.* No. 24), and April 22nd, 1854 (*Stbl.* No. 70).

continuation of the early fishing system, recommended by them in 1846. The main cause of opposition to early fishing was the Herring-hunting Association's contrary interest. This corporation, or rather annual covenant between shipowners, generally found it inconvenient to equip one or more "hunters" for the sole benefit of the few shipowners who chose to try an early cast of the nets; and all shipowners were obliged to be partners in the association and act upon its rules, in order to have some of their fish brought into market early and sold at the high prices prevalent during the first days of the season. As a fact, the liberty to fish before St. John's Day, though in itself desirable because good herring was sometimes caught at an earlier date, could only be of real use if the sale-hunting monopoly were abolished, and any buss allowed to transfer fish to any other, or sail home at any date with or without a full cargo. Thence the discussion of the laws for early fishing served to throw some light on the evils of the hunting monopoly, and are therefore of importance in the history of the regulation system, although the lawful opening date of the fisheries was not in itself one of its constitutive elements properly said, and could be altered without necessarily affecting the rest. Wherefore the measure of 1846 was not, properly speaking, the beginning of the system's destruction.

Premiums were the vital point in which the system was attacked. It has already been shown that, as sea-fisheries were regulated, bounties to them were necessary and equitable; and that, on the other hand, the fallacies of the bounty system were by this time found out in Holland, not only by political economists, but by the greater part of the enlightened and disinterested public. Fishery bounties threw a peculiarly strong light on the inherent defects of the system: for the trade declined in spite of them, and had,

indeed, been in constant decline since bounties had first been given. Accordingly, when in the course of the years 1830-50 Parliament began seriously to oppose protection, the annual budget debates usually brought on a discussion on fishery premiums. The latter were especially the object of pretty general censure in the course of the debates on the budget for 1850, when their gradual abolition was demanded in unequivocal terms. Sea-fishery bounties at this period occasioned an average annual expenditure of about two hundred thousand florins, or some £17,000 sterling, a large sum for so small a State, especially as it was now felt to be poured into a Danaid's vat ; and Government, besides being opposed to premiums as a principle, was of course anxious to reduce or if possible to stop this drain upon the Exchequer. The Department for home affairs, under which matters relative to national industry at the time resorted, was then headed by no less a statesman than the great Mr. Thorbecke ; and he saw clearly that bounties must be stopped, and fishery laws must ultimately follow. A reversed order of repeal might have been preferable, but a good deal of inquiry had yet to be gone through before determining how far the fishery law reform was to go. The subject was dark and delicate, and it was not easy to procure information upon it unless from fishermen, who one and all clung to the wisdom of their fathers and to the country's money, and did their best to oppose or retard reform. Meanwhile, to save money by simplifying institutions (*bezuiniging door vereenvoudiging*) was at the time the popular cry in home politics, and the treasury interest was imperative against the continuation of premiums. Their abolition (by degrees of course) was therefore resolved upon ; and all sea-fishery bounties were reduced by one-tenth by royal decree of February 27th, 1851 (Staatscourant No. 52),

under express statement that the step was taken preparatory to the entire abolition of premiums. The stone was now set rolling; and it was generally understood that the whole of sea-fishery legislation was at issue.

The measure of course elicited strong opposition. The whole of the fishing interest, from this moment downward, clamoured against a step which, as they represented it, deprived their tottering trade of its sole support; but failed to see and to appreciate the equivalent of liberty for bounties, which was being prepared for them. Parliament had approved the measure before it was taken. The budget estimate of sea-fishery bounties for 1851 had been lowered by about one-tenth, in accordance with the intentions of Government, and upon previous recommendations by a majority in the Second Chamber. During the debates on the budget, in a memorable night sitting on December 21st, 1850,* a Conservative member, Mr. Wintgens, who in the next years gave much of his attention to fishery matters, moved an amendment to carry the estimate up again to fl.172,000, or the sum granted in the preceding year. The honourable gentleman declared himself, as protectionists without number have done since, an adherent of free trade in principle, and, as such, averse to bounties as a rule; but he claimed circumspection in the rule's application, and this circumspection, in his opinion, was inconsistent even with a 10 per cent. reduction of premiums. A protracted debate ensued, in which the whole of the arguments for premiums, such as they were, were brought out. The importance of the Grand Fishery, even in its then reduced state, and the folly of letting it go to ruin, were exposed at a length the more remarkable, as the debate opened at one and lasted till past three in the morning, an occurrence extremely rare

* *Handelingen v. d. Staten-Generaal*, 1850-1, p. 461, *sqq.*

in Dutch parliamentary habits. But no one succeeded in proving, or indeed attempted on logical and historical grounds to prove the point at issue, viz. *that bounties could save the fisheries*; and the fact that British herring-fishery had increased rapidly since the discontinuance of bounties in 1830, was the only truly relevant and conclusive argument preferred in the course of the debate. The result of the night's proceedings was the rejection of Mr. Wintgens' amendment by forty-five votes against sixteen; in other words, a sentence of death passed on premiums, and implicitly on the fishery legislation system in general.

A very important point was now gained; and a reform leading to the ultimate establishment of free fishery was but a matter of time. Government made no secret of its preoccupation to examine into the subject of fishery law repeal, and on several occasions declared in Parliament that the matter was under its constant consideration. It was now to be considered how far, and how fast, the reform was to go. A considerable majority in the Second Chamber of the States-General (or House of Representatives) from 1851 downward lost no occasion to demand immediate and complete repeal of all fishery laws and regulations; but as yet the many evident and latent difficulties of the subject forbade such a course. Existing laws were extremely complicated, sundry interests were involved in the matter; and although in a rational state of things those interests might have been in perfect harmony, monopoly laws had since centuries brought them into collision. Some points, such as the propriety of laws for the protection of fish-life, were overhung with positive uncertainty; all were darkened by contending one-sided representations from the various parties concerned, each of whom, as usual in cases of this nature,

nervously clung to its own *prima facie* interest ; and yet Government could scarcely hear any but parties concerned, as no one else was supposed to be a judge of a matter so dependent on personal experience. Cure-herring fishers, for instance, insisted on their monopoly, which smoke-herring fishers wanted to be overthrown ; the case was exactly the reverse as regarded the smoke-herring or "steurharing" monopoly ; and whom could the Minister consult, unless either cure or smoke-herring shipowners ? Three Fishery Boards were then in existence : one for the Grand Fishery, one for the fresh-herring and coast fisheries, and one for the Iceland cod-fishery ; and on the several monopolies, the cod-fishers' permission to cure, and the distribution or abolition of premiums, no two of these, when consulted by the Home Department, were of one mind. The whole of the questions involved in the fishery laws were therefore peculiarly hard to elucidate ; and the inquiry preparatory to further measures took some years to lead to a result. And yet Government was at first resolved to rely solely on such information as could be collected by the customary canals of office. Mr. Wintgens, the member of Parliament quoted above, in October 1852 proposed an Inquiry into the whole of the subject by parliamentary committee, an institution then just introduced into Dutch constitutional law. There was much opposition to the plan ; the more so, as a suspicion prevailed that its mover's intention was to have bounties re-established, or at least to counteract their gradual suppression. Mr. Wintgens strongly denied the charge ; but he nevertheless withdrew his proposition at the Minister's request, who declared that a Government inquiry was then proceeding and about to be terminated.

Political events entirely alien to the fishery questions

occasioned Mr. Thorbecke's Cabinet to withdraw from office in the spring of 1853, before the inquiry had led to satisfactory results. Before this, however, the great statesman had taken further steps in the path upon which we have seen him enter. By decree of January 10th, 1852, the reduction of bounties had been carried, for that year, to 25 per cent.; and it was carried to 50 by decree of January 5th, 1853. The prohibition from trawling in winter contained in the decrees of 1825 and 1837, and mentioned in the preceding chapter, was also withdrawn under Mr. Thorbecke's administration; the initial term of prohibited trawling being shifted from November 15th to December 15th, in November 1852, and the prohibition removed altogether in January 1853.* The latter measure consisted in the entire repeal of the decree of November 15th, 1825, including the control over the nets used in coast fishery, and the premiums for hook-and-line-fishery, during the time when trawling was prohibited. Coast fishery was now free, both in the choice of its implements and the regulation of its fishing time; and the only measure for the protection of fish life still in vigour was the decree of 1842, on the use of the shrimp net or *saayem*.

Minister van Reenen, Mr. Thorbecke's successor in the Home Department, found the sea-fishery question in this state on coming into office. Being unacquainted with the precise bearings and antecedents of the matter, he was not prepared at once to act in it, and for the moment stopped the process of repeal, by leaving premiums for 1854 at the rate of the preceding year, or half the original amount.† The Minister stated his intention to this effect when laying

* Decrees of November 24th, 1852 (*Stbl.* No. 202), and January 29th, 1853 (*Stbl.* No. 8).

† Royal Decree, January 9th, 1854 (*Stbl.* No. 9).

the budget for 1854 before the States-General ; and the result was a sharp debate on December 3rd, 1853, in the course of which an amendment to continue the reduction of bounties was moved, and rejected by a majority of only one vote.* The Minister's principal reason for leaving matters *in statu quo* for the nonce was, that he saw a rashness in a farther reduction of premiums unless attended by repeal of the fishery regulation laws, which thorough measure was not as yet warranted by the information obtained by Government inquiry. The debate once more showed the extreme anxiety of a strong majority in the Second Chamber to go through with the matter, and have done with the fishery laws ; and this moved Government, at the outset of the year 1854 to appoint a Royal Committee to inquire into the question "whether all sea-fishery laws and regulations could be repealed altogether, or whether it was desirable to maintain, or re-enact any part of them."†

Parties immediately concerned in sea-fishery, as may be readily supposed, had not in the meantime been silent in the debate. Both the actual reduction of premiums and the proposed repeal of protective laws, were the object of violent criticism and passionate appeal by the organs of the fishery interest. Kemper's advice in favour of the law of 1818, although given in circumstances long gone by, and overthrown by forty years' experience, did daily service in this discussion. The importance of the fisheries as an ancient branch of genuine national industry, as having been once the "principal gold-mine of the country,"

* *Handelingen van de Tweede Kamer*, 1853-4, p. 288 *sqq.*

† Royal Decree of February 9th, 1854, No. 57. The Committee's Report was published 1854, and has been quoted more than once in the course of this work.

as a recruiting-school for the navy, &c. &c., was passionately urged ; and the two main points to be established, viz., the possibility of upholding the business by maintaining bounties and laws, and the certainty of destroying it by repealing both, were taken for granted without examination. The nation was used to such demonstration. Outcries of a similar nature had been raised in succession against each of the several reforms by which, since the Belgian revolution of 1830, Free Trade had gradually been established as a standard principle in Dutch economical policy. There had been a majority, both in and out of Parliament, to back those several measures ; and the evils prophesied as sure to attend them had not been felt. Free Trade at the time was implicitly believed in, and was successful. Wherefore on the public at large, and on Parliament especially, the fishery opposition made little or no impression.

Nor was Fishery Law Reform entirely stopped during the first part of Mr. van Reenen's administration. The States of the several Provinces, actuated by the several fishery colleges, and subject to Government approbation, were, as has been shown, legislators in most of the detailed fishery rules ; and in this quality they took a share, even before the legislative power of the realm, in the removal of fishery regulations. The rules concerning fresh, or smoke-herring fishery first underwent considerable alteration at the fishers' own request, as preferred by the college for the fresh-herring and coast fishery. The decree relative to the subject, dated December 31st, 1822, had been repealed in 1848, and replaced by two consonant statutes for the Provinces of North and South Holland, into which the former province of Holland had been divided in 1840 ; but as regards their principal contents, these two enactments

were not at variance with the Statute of 1822.* In 1854 at the request of the States of both provinces, the Regulations were altered on two important heads, by the abolition of last money, till then levied from all fresh-herring fishers by the College, and the shifting of the fresh-herring fishery's opening date from September 20th to August 20th of each year.† The latter alteration especially indicated a slackening of the monopolising spirit, as on August 20th cure-herring fishery was still in full activity on the Scotch or English coasts, whereas the former opening date of the fresh-herring business had been contrived with a view to keep bumboats out of the herring seas altogether during the height of the cure-herring season. A month afterwards the States of South Holland, (in whose province nearly the whole of the Grand Fishery was then centred) took another and much more decisive step towards the abolition of the curing monopoly, by permitting bumboats to cure all herring caught in the course of any voyage commenced after October 10th. The measure had been strongly urged by the Fresh-herring and Coast Fishery College in the course of the preceding year, and was then retarded, not by any unwillingness on the part of provincial authorities, but by the naked fact of the request having been preferred too late for sanction by the Provincial States ordinary summer meeting.‡ This very important breach in the Grand Fishery's curing monopoly was sanctioned by Royal Decree of September 5th, 1854 (*Staatsblad*, No. 132), in virtue of the Royal qualification, established by clause 16 of the law of

* Royal Decrees of August 22nd, 1848 (*Staatsblad*, Nos. 36, 37)

† Decrees of August 7th, 1854 (*Staatsblad*, Nos. 109, 110).

‡ See Mr. Gevers van Endegeest's speech on premiums in the Second Chamber, on December 3rd, 1853.

1818,* to grant dispensations from the said monopoly. It will be remembered that the said royal qualification had contributed to make the law of 1818 acceptable to such members of Parliament as then objected to monopolies as a principle. *It was now used for the first time*, at a moment when the repeal of the law itself was looked for on all hands, and in immediate perspective.

On September 29th, 1854, or exactly a fortnight after the momentous date on which the curing monopoly was thus broken into, the Royal Committee appointed in February of the same year laid their Report before the Home Department. If any doubt remained in an unprejudiced mind as to the propriety of doing away with the whole of the sea-fishery laws, this very remarkable document was sufficient to dispel it. It was the result of an inquiry at once thorough, impartial, and dispassionate; and it laid before the public, in a clear and terse resumption, the whole outlines of the sea-fishery system, its faults, and its effects. The Committee's members, four in number, had been selected out of the Permanent Committees of the Provincial States (*Gedeputeerde Staten*) of South and North Holland; they had, therefore, had ample occasion in the fulfilment of their daily official duties to acquire well-founded views on sea-fishery questions. Their secretary, now Professor Buys, has since achieved an eminent career in science and political literature. The report was henceforward the elementary handbook for any one desirous to form an opinion in sea-fishery matters. The public at large, as has been said, was then strongly disposed against Protection; but it is more than probable that most were unacquainted with the exact bearings of the case for and

* Appendix D.

against Protection as applied to fisheries, until they had read the Committee's Report.

It is needless here to dwell on the contents of the document, as most of the matter contained in it has been more amply developed in the preceding pages than in the Report itself. A special mention, however, ought to be made of Appendix I to the Report, containing an account of witnesses examined. Nearly all these witnesses were concerned in fishery or trade in fish ; and their evidence, taking all in all, was a mass of contradiction. Parties concerned in the Grand Fishery in 1854 stoutly maintained that obligatory assay of cured-herring was the only way of warranting its quality, and fairly did warrant it ; whereas two great dealers in fish stated in as many words that assay, as then practised, gave no warrant whatever, and one of them added that, if made facultative, it might be quite as efficient as when obligatory. Cured-herring fishers and their representatives denied that herring caught by bumboats could yield a tolerable article when cured ; fresh-herring bumboat owners, as well as herring dealers, were entirely confident as to the contrary, and if they did not strongly insist on the removal of the Grand Fishery's monopoly, it was chiefly because their own was expected to be withdrawn together with the other. One dealer averred that the "Vereeniging van Zoutharing-reederyen" was ruining herring commerce by enforcing artificial prices and restraining supplies. Another (who was also a shipowner) stated that, as things were, the association acted for the best of both fishers and dealers by regulating the market ; but added that entire liberty was the only chance for the herring fishery, whereas delegates from the College of the Grand Fishery strongly insisted on having existing laws maintained, and one buss-owner from Enkhuizen went the length of stating, in the

face of the most conclusive statistical evidence, that no decline of the cured-herring fishery had occurred under those laws for twenty years.

Summing up the results of its inquiry, the Committee came to a set of conclusions, which may be rendered as follows :—

The aim of the fishery laws is to have herring sold in small quantities at high prices. The interest of both fishers and consumers requires herring to be abundant and cheap. Therefore the laws ought to be abolished.

And to this end, the Committee laid the draft of a Bill before Government, the chief purport of which was as follows :—

Everybody to be free to fish when, how, and where he finds convenient. Foreign sea-fish to be imported duty free.

Assays of herring to be made facultative. Government to have assayers and branders at the disposal of all who shall require their herring to be branded. Assayers to be appointed by a College for the Netherlands sea-fisheries, *which shall have no other administrative functions whatever*, but be a Consultative Board to Government on sea-fishery matters, *a majority in which shall be composed of men not personally concerned in the trade.*

As exceptions to the general rule of free fishery, the Committee advised to re-enact the prohibition from trawling in winter along the coasts, and to maintain the law against the use of the shrimp-trawl whenever fry of fish should have been found in it. The reason for these exceptions was, that most of the fishers examined by the Committee believed in the exhaustibility of the coast waters by the unrestricted use of ground-nets.

The case had now been heard to satiety. All parties had pleaded their side of it; both the public and the

legislative power were fully enabled to pronounce ; and a termination of debate was an urgent necessity, as the state of uncertainty about ulterior measures, combined with the suppression of premiums while restrictions remained, for some years reduced the herring fishery at a fast pace indeed. More than a year, however, was still suffered to elapse before a final decision was asked from the legislative power ; and the only steps taken in 1855 were a further reduction of both premiums and monopolies, within the range of Government competency. By Decree of January 9th (Staatscourant, No. 10), the reduction of premiums, which had been stopped at 50 per cent. in 1854, was carried to 75 per cent. ; and no provision for premiums was made in the budget for the next year, so that none were paid from 1856 downward. Next, the Grand Fishery's curing monopoly having been impaired in 1854, by allowing coast-fishermen to cure herring after October 15th, the coast-fishers' monopoly was reciprocally broken into in 1855, by allowing 'buss-shippers to salt herring for smoking (*steuren*) after August 20th, or the coast fishery's opening day.* Competition was thus opened, within certain limits, in both branches of fishery ; and buss and bumboat owners, from the season of 1855 downward, were each others' competitors on tolerably fair terms, except so far as the latter continued to be precluded from curing in summer.

This remnant of the curing monopoly, besides those of carrying and selling, the prohibition against importing foreign fish, and the rest of the edifice of sea-fishery protection, were now to be cancelled. A law was necessary for this ; for the said institutions were either contained in or directly based upon the law of 1818.

* Royal Decree of August 2nd, 1855 (*Bijvoegsel op het Staatsblad*, p. 347).

On December 4th and 7th, 1855, Minister van Reenen brought in two Bills for the final abolition of the system the development and effects of which have been the principal subject of the preceding pages.

One of these Bills, treating of sea-fisheries, was a reproduction of the draft made out by the Committee more than a year before. The other, treating of Customs duties on fish, reduced these duties to an amount equivalent to 10 per cent. on salt and cured-herring and miscellaneous salt fish (*rommeling*) of foreign catch, and abolished them for all other descriptions of fish, whether fresh, salt, dried, or smoked, including shell-fish. The duty on salt-herring was fixed at fl. 1.50, or two shillings and sixpence, on the barrel of 150 pounds. The duty on herring was simply meant as a transitory measure not to expose the fishery at once to the full effect of unrestrained foreign competition. It should be noticed that the absolute prohibition to import any foreign herring contained in the law of 1818 had in the meantime been slightly mitigated. As the Customs tariff stood in 1855, cured-herring was still prohibited, but salt-herring not cured was permitted to be imported in the months between November and May, subject to a duty of fl. 3 on the 100 pounds, and "buck-ing," or smoked-herring, was admitted at all times under a duty of fl. 0.90 on the thousand.

These two Bills were kept under consideration for a year and a half, owing to a series of mutations in office actuated by political motives alien to the subject of this work. As far as the prevalent opinions in Parliament were concerned, both Bills might have been passed in a few weeks. Free Trade, as said, strongly prevailed in Parliament; and as every system is carried to extremities in the first period of its triumph, so "doctrinarism" in Free Trade, and the

uncompromising principle of "*laissez faire, laissez passer*," was predominant with the Liberal side in politics. Thence the history of the Fishery Bills may properly be contained in a very few words. Government went a fair length Free Trade way, and Parliament urged them still farther.

Opposition to the leading idea of the Bills was now confined to the circle of fishery interest, and to those few publicists who, in the days of which we are speaking, openly advocated Protection. In Parliament scarcely a show was made of opposition to Fishery Law Repeal. The Sections' Report on both the Bills commenced by the auspicious statement that the principle laid down by Government had met with nearly universal approbation. Everything which looked like an exception to that principle was objected to. Not a few members wanted the fishery law to consist solely of a clause repealing all existing laws and decrees on the subject—in other words, they wanted the facultative assay, the advising College, and the measures against destruction of fish-life, to be removed out of the Bill, and all Customs duties on fish to be abolished at once. Assay of herring, they said, yielded no proper warrant as to quality, and retarded those expeditions of early herring by which very high prices were made during the first days of each season. The trawling and shrimping restrictions were regarded as unnecessary; and it was shown upon the occasion that, as to the period when, and the place and depth where, spawn of plaice, sole, flounder, &c., are found in the sea, the opinions of pisciculturists and fishermen were then anything but consistent. Some said that spawn of these fish lay on the bottom, and was therefore destroyed by the trawl-net; others averred that it swam in the water, and did not suffer from a trawling apparatus. According to some, the period when spawn and fry required undis-

turbed development lay between November and February ; others stated that plaice full of spawn had been caught in May. A conclusive argument against restrictions was drawn from the fact that they did not exist in the Zuider Zee, where plaice, flounder, and turbot survived the effect of the most absolute fishing liberty. It might have been added that the trawl had been used in the North Sea without a restriction for centuries ; that its use had only been interrupted or curtailed between 1676-89, and 1825-53 ; and that exhaustion of the coast waters, or scarcity of fish positively attributable to over-fishing, had never occurred, and the year 1856 was particularly beneficent for trawlers and coast-fishers in general. Besides, foreigners were not subject to the prohibitive laws, and were free to trawl off the Dutch coasts in all seasons ; and, as a writer on the subject not inadequately remarked, "if the sea could indeed be emptied or *fished dead* (*doodgevischt*), it was but fair that Dutchmen should have their share of the burial feast." The rule for a temporary prohibition of the use of the shrimp net, whenever fry of fish should have been found in such a net, was opposed on similar grounds. It sacrificed one branch of fishery to another ; and many held that fish born under the Dutch coast will migrate to other waters ere it be full-grown, whence to protect such fish in early life would be to put bread into the mouths of Belgians, French and Germans, who would have the benefit of the lives so preserved, although they did not use reciprocity in the matter. Even a College, or Board of Fisheries, was objected to, although its proposed attributes were merely to supervise assays, and advise Government in fishery matters. The paralysing sway so long held over fishermen by Boards, Colleges, and Associations of a very different nature evidently scared some of the more uncompromising Free

Traders, and made them shun the notion of having a Board at all.

These men of thorough measures did not, however, ultimately carry the day. The Fishery Bill was debated on March 7th, 1857; and facultative assay of herring, as well as an advising College, obtained a majority. On the other hand, a learned and lengthy speech by a member versed in natural history settled the fate of restrictions on trawling and shrimping, and they were removed by amendment. The law, as ultimately adopted,* simply established the entire liberty of all sea fishery in the largest sense of the word, and repealed all prohibitions of the importation of sea-fish. Next it established facultative assays of herring caught in Dutch vessels, and instituted a College to appoint assayers and generally promote the sea-fisheries' interests by advising Government in matters relative to them. The Bill on Customs duties on fish underwent some vicissitudes. It was amended so as *at once* to abolish all such duties; and the amendment was carried in the Lower House by a majority of one vote. The Upper House, or First Chamber of the States-General, then rejected the Bill by a slight majority. Government brought it in once more, in its primitive wording, in September 1857, when a fresh conflict was avoided by an amendment reducing duties on salt-herring and "rommeling" to half the amounts proposed. Their entire abolition took place two years afterwards.†

Provincial regulations were repealed soon after the new law was passed, as contrary to its purport; and a new law as a base for future administrative rules on the immunity of

* Dated June 13th, 1857 (*Staatsblad*, No. 86). An error in the text was removed by law of August 13th, 1857 (*Staatsblad*, No. 102).

† Laws of Dec. 11th, 1857 (*Staatsblad*, No. 122) and Dec. 23rd, 1859 (*Staatsblad*, No. 136).

salt excise was established simultaneously with the new Customs tariff on fish.* Some control against fraud is of course inevitable whenever an article subject to excise duty is exempted from it when consumed for one special purpose ; and the object of the new regulation was to make that control as easy as possible for fishermen, as a compensation for eventual damage by foreign competition attendant upon the reduced tariff.

A regulation upon assays of herring was made in time before the opening of the herring season of 1858.† The new rules were as simple as was consistent with maintaining the accustomed appearance of Dutch brand-herring. The old distinctions of "full-maatjes," "ijlen," any of these either sound or "*wrak*," were maintained, with a brand for each. To these was added a new brand for "overnight," or herring cured the day after its capture, which process was now permitted, whereas former regulations forbade such herring to be cured. A new distinction was likewise made between herring caught in deep sea, under the North Sea coast, and in the Zuider Zee ; the latter two qualities being now allowed to be cured as well as the one first named. Every barrel of assayed herring was thus to carry two brands, one stating its description, and the other where it was caught. The figure of the brand, formerly representing a lion, was altered into the royal crown ; and it will be shown in the next chapter what evil consequences attended that alteration. Assayers were to brand all herring presented to them, unless the barrel were defective, or not stamped with the owner's mark and filled from top to bottom with herring of one single description. Care was thus taken that there should be a Dutch brand as of

* Law of Dec. 11th, 1857 (*Staatsblad*, No. 123).

† Decree of January 11th, 1858 (*Staatsblad*, No. 2).

old, to which foreign dealers were used ; but any one who chose was free to sell or export unbranded herring.

Sea-fishery Reform was now complete, and the trade allowed entire liberty in every respect. I shall briefly relate, in a last chapter, what effects were wrought by the measure.

CHAPTER IV.

REVIVAL.

IT is, I believe, a fact now known on every considerable fish market that Dutch sea-fisheries have been increasing fast for the last fifteen years. There is no need of words to state the fact ; it may be seen at a glance from the fishery statistics of the last twenty-five years, the leading figures of which I have compiled from the annual Reports of the College, or Board of Sea-fisheries, instituted in 1857, and beg to lay before the reader in Appendices K, L, and M. It now remains to be shown how the increase, and indeed the entire revival of the business, was a direct consequence of fishing liberty substituted for fishery regulation. The task is an easy one ; for, from 1857 downward, the above-named Reports contain every particular relative to the history of Dutch sea-fisheries.

The revival alluded to is nowhere so apparent as in the herring fisheries ; for a general survey of which, from 1857 downward, I refer the reader to Appendix K. It will be seen from this table :—

1st.—That bumboat fishers in the coast villages used their new-gotten right to cure herring on an insignificant scale for some ten years after they had obtained it.

2ndly.—That the prices fetched by their cured-herring were, on an average, not much inferior to those of “buss-herring” cured in keeled vessels.

3rdly.—That they began to cure herring on a much larger scale in 1866 and subsequent years.

4thly.—That the whole production of cured-herring, and the number of ships employed in that production, took a leap upwards about the same time, and they have since then been constantly increasing.

5thly.—That a gradual lowering of cured-herring prices (see the *lowest* prices in columns 12 and 14) coincides with the increase of production.

Thus the irrefutable verdict of statistics now corroborates what *one* corporation realised in 1829, and what the Committee on Fisheries in 1854 set down as the fundamental idea of reform, viz. *that abundant capture, and not high prices, were the means of restoring the Dutch herring fisheries*; whereas the ancient system was based on the opposite theory.

Abundant capture (setting aside, of course, the vicissitudes of herring seasons) could only be, and was, obtained by means of improvement in the fishing processes. The progress of these improvements may be described as follows: the net of hemp was supplanted by the cotton net, the use of the cotton net brought luggers and cutters into use instead of the old clumsy "hookers"; and the use of new nets and ships caused the capture to increase five-fold in fifteen years. The cotton net therefore gave the impulse to the thorough revival of the fishery; *and the cotton net could not have been used under the Grand Fishery Regulation, 1827, which prescribed all nets to be made of hemp yarn.*

An eminent shipowner, Mr. A. E. Maas, of Scheveningen, was the first to import cotton herring-nets from Lowestoft, about 1857; and at the outset used those nets in bum-boats only. The superior catching power of the nets at

once became apparent. Being much lighter than hemp, larger fleets could be used, and more water covered ; and at the same time their depth could be made greater without the weight causing the upper meshes to contract, and be of no avail. But, as a set-off to their lightness, cotton nets were found subject to more wear and tear than the solid net of the ancestors. Mr. Maas spent some years in tanning and boiling experiments to make them as durable as hemp ; and cotton prices being at the time up, in consequence of the American war, it was not till 1865 that the use of cotton nets fairly began to spread among herring ship-owners.

Several causes besides the dearth of cotton meantime counteracted the effect of the new law. Both shipowners and dealers had to get accustomed to liberty before learning how to turn it to account. A body of men brought up from childhood to strict observation of a set of rules precluding all innovation whatever, could scarcely be expected, immediately upon the withdrawal of those rules, to turn their attention to novelties, and invest money in experiments, or look abroad for examples, all of which operations they had been taught to regard as the breaking of sacred laws. Fetter a man down through life, and when set free he will be some time in recovering the use of his limbs. Besides these psychological causes for a continued stagnation, positive checks at first kept the herring-fishery down. Years elapsed before an enlightened administration, advised by a College of competent men, could, under the salt excise law of 1857, regulate the conditions of freedom of salt excise for fishermen in such a manner as not to thwart the development of the several branches of sea-fishery. The herring seasons of 1857-1861 were in general unfavourable, and the returns below the average,

and sometimes bad. Much capital had of late been lost in the business ; and the state of suspense in which it had been kept between 1850 and 1857, when bounties were gradually withdrawn and uncertainty prevailed as to future fishing liberty, had especially done much to reduce it, and scare fresh capital away. Extensive markets, such as those of Northern Germany, Hamburg, Bremen, and Stettin, which in former centuries were supplied by Dutch brand-herring exclusively, were now entirely lost ; and customs tariffs in some countries thwarted an extension of exports, while Scotch herring was prevalent everywhere, and very far ahead in the race. The commercial treaty with Belgium expired on January 1st, 1858 ; and the severe prejudice caused to Dutch fisheries by the elevation of tariffs attendant upon the event was by no means counter-balanced by the abolition of differential duties against importation of Dutch fish in Russia, which took place in the next year. But the greatest enemies of Dutch herring in the markets abroad, it must be owned, were Dutch dealers. Prices of good Dutch brand-herring were then still as a rule above those of Scotch ; and no sooner was importation of herring permitted than some Dutch dealers hastened to import Scotch herring of anything but the best quality, and export it repacked, not under the new Dutch crown-brand, but in old barrels marked with the *abolished* brand, consisting of the figure of a lion. The fraud was generally detected too late by foreign buyers, because the change in the brand had not been efficiently brought to the knowledge of dealers abroad ; and when detected and reported on it could not be punished, because it had been omitted to enact penalties against the use of abolished brands. Thus the liberty to forego assay was at first misapplied for purposes of delusion, and the perpetrators

of the fraud of course were themselves the victims of their short-sighted artifice. The alteration of assay rules in 1858 contributed to spoil the market. Under the Regulation of 1827 herring was assayed and sorted with tolerable accuracy immediately upon being landed, and a preliminary mark was generally put on the barrels to certify the result. The large barrels, loosely packed as they were on board, where close and careful packing of herring was an impossibility, were next sold to wholesale dealers, and by them delivered into the hands of *packers*, who transferred the fish to barrels of the regulation size, shape and construction, and the article was, by this re-packing, prepared to receive the official brand for exportation. These *packers*, who were alone entitled to transfer herring from the "sea barrel" (*ton zeestuks*) into the brand-barrel, were public officials, and under oath, like the assayers themselves, whence there was a fair certainty that the contents of the "sea-barrels" should be transferred to the exportation barrel without any tampering; and the barrels issuing from the packers' hands could be, and were generally, branded by the assayer with the exportation brand, without renewed examination of their contents. Under the Regulation of 1858, which was the first piece of work prepared by the new College (and owned by them in their Report for 1859 to have been deficient in several points) there were no sworn "packers," and the assayers' own verification was required for the exportation brand as well as for the first marking of the sea-barrel; the latter operation being still a requisite to shield first-hand buyers against fraud. Now, however diligent the assayers (and as to their diligence and honesty there are no serious complaints to my knowledge) it was beyond their power to effectually and *twice* control the immense quantities of fish subjected to them under the spur and hurry of the early "hunting"

days of the season, when every dealer was anxious to have thousands of barrels branded and exported at once. The first assay upon landing was done as usual, and the first sale of the herring to the inland wholesale dealer was effected upon its credit; but for thoroughly performing the second there was no time left, and the inspection previous to giving the crown-brand was generally very superficial, allowing much refuse of the Scotch fisheries to obtain the Dutch brand, and spoil its renown abroad. A revision of the branding rules in 1860, and another in 1861,* intended to introduce an easier mode of control, and prevent foreign herring from obtaining the Dutch brand, failed to accomplish the purpose. Both the old and new brands continued to be put on bad foreign herring; and the fraud was even turned into open connivance with foreign dealers, who had "Scotch herring in Dutch fustage," consigned to them at prices above those of Scotch and under those of genuine Dutch fish, and in their turn made their clients pay the latter. Although of course highly prejudicial to the sale of the genuine article, these dealings could not be stopped; and they went on, on a scale more or less extensive as herring prices ruled higher or lower, until the average prices of Dutch brand gradually came down to a level with, and even below, those of Scotch crown-brand, chiefly owing to the frauds described. Then, of course, there was no longer a profit in selling Scotch herring for Dutch; and the only way of making fraudulent gain lay in obtaining the Dutch "full," or "maatjes," crown-brand for herring of inferior quality, which practice never could be stopped entirely until the official brand was finally abolished altogether. Assayers always did their utmost;

* Decrees of March 4th, 1860 (*Staatsblad*, No. 11) and February 24th, 1861 (*Staatsblad*, No. 13).

but their control was not now more efficient than it was in former centuries, when we have seen foreign dealers frequently complain of bad herring being sold under Dutch prime brands.

Such were the principal reasons which in the first ten years after the legislative reform counteracted actual improvement, the progress of which shall now be described.

Cotton nets had been first used in bum-boats, as said above, about 1857, and were in a keeled vessel in 1861. In 1865 about one-third of the fleet had some cotton nets on board, but not a vessel could use many of them; for on account of their lightness they did not sufficiently steady the clumsy "hookers" while lying before the fleet. The virtue which increased the catching power of the nets was a defect as regards navigation; and whenever a fleet chiefly composed of cotton nets was tried, the vessel was apt, as soon as part of the nets was got on board, in rough weather to drift across the rest. The evil might have been stopped by enlarging the fleets; but there is, of course, a limit to the surface of net that can be managed in one ship of a given size. Experience soon showed that light vessels were required to get the full avail out of cotton fleets; and this seems to have been the reason why they were at first principally used in bumboats, two of which, belonging to Mr. Maas, tried the Shetland seas in 1862, being the first Dutch flat-bottomed vessels ever seen in those waters. But if bum-boats were light, they on the other hand afforded too little stowage for an abundant catch. The point to be gained was to have a vessel at once light enough to manage a cotton fleet in all weathers, and capacious enough to carry as much herring as could be caught in such a fleet.

Mr. Maas, now as formerly ahead in fishery innovation,

solved this problem in 1866, by sending out a lugger built upon a model from Boulogne. The vessel had as yet more hemp than cotton in her fleet; she had upon the whole not a favourable catch, and she began to fish three weeks late, and thence did not share in "hunting" prices. In spite of these disadvantages, she covered her building and equipping expenses, including two complete fleets in six voyages, and in the first year yielded a net return of thirty-seven per cent. The splendid success of this first lugger in the Dutch fleet, named by her owner the *Scheveningen*, after his residence, was the signal of a rapid revolution in the country's herring-fishery. Four luggers were launched in 1866; and the number increased very rapidly in the next years. All new ships built were either luggers or cutters; and the wharves on the Maas had a busy time of it. The old "hookers" were sometimes sold off before being worn out; and the transformation was so rapid that, in 1872-3 and 1875-6, there was actually a decrease in the strength of the herring fleet,* owing solely to old vessels being sold off faster than new ones could be built. The following figures show the progress of this most important reform:

Years.	Hookers and sloops.	Luggers and cutters.	Years.	Hookers and sloops.	Luggers and cutters.
1867	85	4	1875	25	90
1868	80	11	1876	17	92
1869	79	28	1877	19	94
1870	69	51	1878	18	109
1871	58	64	1879	14	114
1872	44	64†	1880	12	121
1873	34	68	1881	11	127
1874	31	83			

* See Appendix K.

† The stand-still in lugger-building in 1872 is apparent, not real. Six luggers were in that year transferred to a German herring company formed at Emden, whose directors prevailed upon a Dutch

Improvements in other fishing material went hand in hand with this renovation of the fleet. Sea-fishery exhibitions, as will be remembered, were very frequent about the time now spoken of; and in each of them the Netherlands exhibits outshone those of preceding years. Objects considered and reported upon as novelties at Amsterdam in 1861, and at Bergen (Norway) in 1865, proved antiquated in 1867 at the Hague. British cotton net-yarns created a sensation at the first-named exhibition; Dutch cotton yarns, and nets made out of them, the produce of several inland factories which did a brisk business in them, were medalled at the latter. And it is to be noticed that this strenuous expansion of the whole of the fishery business was obtained without a single florin of subsidy. Up to 1861 Government had contributed towards equipping a "hospital ship," the nature of which has been explained in a former chapter. The subsidy had been gradually lessened, and declined by the common herring shipowners in 1861, since when no "hospital-ship" was sent out.

The organization of the herring shipowning business in

shipowner to sell them the whole of his ships and materials, and take the direction of their business. Any one inclined to pursue patriotism into superstition may read a warning against selling the nationality of a ship or a business in this Emden company's fate. Their ships, managers, and management were Dutch; they fished in the same seas and seasons as Dutch; and yet they never could make catches or returns like Dutch vessels of exactly the same description. While Dutch shipowners, being entirely unprotected, were making handsome dividends, the Emdeners, who have a "protective" customs tariff to shield, and an immense national market to support them, have for ten years hardly shown their shareholders the colour of their money, and were in 1881 still deeply indebted to their Government for subsidial loans not paid back.

the same period likewise underwent a material change. New vessels of course demanded considerable capital, and as their catch averaged from forty to one hundred per cent. above that of the "hookers," capital was invested in them freely enough. Shipowning companies, limited, sprang up, and superseded the partnerships of the old type, many of which liquidated as their hookers were broken up or sold off. The institution of "sale-hunting" shared the general reform. The Herring-hunting Association, which, as said before, was in a previous period formed every year to carry home early herring from the fleet, had continued annually since the law of 1857 had abolished the "hunting" privilege and restriction, and any shipowner was free to carry herring home at such a time and in such quantities as he chose. One firm only kept outside from the beginning; most shipowners found it expedient to be partners in the association for some of their vessels, in order to secure the enormous prices of the opening season, or "hunting time," for some part of their catch; but the association's general expenses were so high as gradually to drive out many vessels; and owners, while they kept some of theirs on the association's books, left out an increasing percentage. The association's mode of operating was also materially altered. It had, till now, kept up the old traditions. Partners bound themselves not to have their ships home before a date annually fixed by common consent, unless with an exceptional cargo; and the fish brought home before that date in the association's "hunters" was sold at certain minimum prices, and kept on hand if prices in the early season were unfavourable. The latter practice was now abandoned, and the whole stock sold in auction for the partners' account as soon as landed. Thus the institution of "hunting" became what

it should have been from the beginning: an annual contract of carriage for common account between ship-owners, and lost the monopolising character it had adopted in the height of the regulation period.

As for innovations in fishing properly said, the main feature of the period now spoken of, is the mixing up of the two branches formerly known as grand and small fishery. Fresh herring or "*steurharing*" began to be brought home in luggers, whose crews thereby managed to turn to account portions of their catch which there was no time to cure, and sometimes, when the catch in the ordinary herring waters was not favourable, went into seas where no keeled vessels were permitted to go by the law of 1818, and made the capture of fresh-herring their business for the time. On the other hand, the pickling of herring in coast bumboats increased exceedingly fast in the years succeeding 1870; so that both the curing and the fresh herring monopoly of old were now not only abolished by law, but had actually fallen into entire disuse among fishermen, and there was no longer a grand fishery in keeled, and a small fishery in flat vessels. The latter fished for herring as early, and in the same waters, as luggers and cutters, which in their turn sometimes invaded the continental shore waters, and did bumboats' work. A glance at the figures in Appendix K will show that not a vestige was ever felt of the dread consequences which we have, in former parts of this work, seen both parties predict as sure to attend such mutual competition. There was indeed a decline in pickle-herring prices, partly occasioned, as has been shown, by dealers tampering with the brand; but the average prices of fresh-herring and "bucking" at the same time showed a tendency to rise, owing to the widening of the market for the latter; and in both branches of the business, the liberty

to choose a fishing place, a fishing gear, and a curing process according to the state of the season and the market, amply made up for increased competition.

The brand, and the more and more apparent impossibility of preventing abuse of it, still continued to thwart progress. I shall conclude this account of Dutch herring-fishery by briefly relating how this last monument of Government interference with it came to be abolished like the rest.

From lugger fishery, as stated just now, there ensued a promiscuousness of the herring-fishery's produce. Besides deep-sea herring as of old, luggers in 1867, and subsequently, brought home fish caught off the continental coasts, which in quality was decidedly inferior. Now, the branding regulations of 1860 and 1861 had ordained distinct brands certifying herring to have been caught either in the high seas (V. Z. V., or high-sea catch brand), under the coast (K. V., or coast-catch brand) or in the Zuider Zee. The latter brand was never or very seldom given, as Zuider Zee herring of late years has ultimately proved unfit for curage; but lugger skippers were in the habit, although they often fished under the coast, of declaring all their cured-herring as high-sea catch. They generally obtained the V. Z. V. brand for inferior fish, as an efficient control never could be carried into execution. Bumboat owners, on the other hand, not only cured herring on a large scale, but actually sometimes cured it *ashore*, contrary to all ancient notions and prescriptions; and fish thus cured, though certainly much inferior to fish cured on the day of the capture, obtained the same brand as the latter. It became, in short, an impossibility under the new fishery *regimen* to certify where herring had been caught; and a new regulation approved by Royal Decree of May 11th, 1868 (Staatsblad

No. 66), accordingly ordained the V. Z. V. or K. V. brands to certify, not where fish should have been *caught*, but where it should have been *cured*, *i.e.* whether at sea or ashore. At the same time, as the promiscuous use of the several fishing methods led to promiscuous results, the main stress of the brand certificate was laid, not as formerly on the place where herring should have been either caught or prepared, but on its *actual quality*; and a new sub-division was introduced into the three great descriptions of Dutch brand herring (full, "maatjes," and "ylen"), each of which was to be furthermore stamped either 1A, 2A, or 3A, according to its quality upon test. This arrangement of course greatly increased the assayers' task and responsibility; and as accurate verification of the contents of each barrel became more utterly impossible in proportion as the yields of the annual catches increased, it soon became customary to brand herring as Full 1A, Maatjes 1A, or ylen 1A, as the case might be, upon little besides the owner's authority. The circumstance of course by no means increased the brands' repute abroad. Moreover, the change in the brands proved an evil in itself, inasmuch as in some foreign markets confusion once more ensued between the old brands and the new.

To abolish the Government brand was the only way out of these several difficulties, as the Sea-Fishery Board clearly saw; but they did not venture to advise the measure unless Great Britain should cease to brand at the same time. Foreign correspondents averred herring not bearing an official mark to be unsaleable so long as Scotch branded herring should be in the market; and overtures made by the Dutch to the British Government about a simultaneous abolition of brands were received in a very friendly and

congenial spirit, but ultimately led to nothing, owing to circumstances which it is unnecessary here to mention. Dutch brands gradually lost most of their reputation ; and the loss was the worse, as *no unbranded herring was exported as long as the brand existed*, upon the representations of the dealers' correspondents abroad.* Thus, as a fact, the brand, after having been for three centuries and a half held on all hands to be the *palladium* of Holland's greatness in the herring market, was now found out to be the main stumbling-block in the path of its progress.

The quality brands, or 1A, 2A, and 3A marks, instituted in 1868, were given up in 1875† on account of the difficulties just now exposed, and the simple brand in use till 1868, stating, besides the year of the catch and the place of curage, the herring's quality as full, "maatjes," or "ylen," was reinstated. No change for the better ensued ; and the Fishery Board, after taking the opinion of many considerable herring shipowners and dealers, in their report for 1875 earnestly advised to abolish the brand, *without waiting for England's co-operation*. It was high time, in the Board's opinion, for Government to stop warranting the quality of an article of which it knew little or nothing, to the detriment of trade in an important article of exportation. The advice was followed, and a Bill for the abolition of the official brand laid before Parliament in June 1877. An intervening political crisis delayed the measure for about a year ; and when adopted by Parliament it was too late to put it into operation for the herring-

* Nearly none of the herring cured in bumboats was indeed branded upon landing, but nearly the whole of the fish was carried to Vlaardingen to be mixed up with the lugger-herring landed there, and exported under crown-brand.

† Royal Decree, March 27th, 1875 (*Stbl.* No. 31).

season of 1878 ;* and June 1st, 1879, was determined upon for its execution. From this date downward assayers appointed by the College have still continued to examine any pickle-herring presented to them, but the operation now bears a strictly private commercial character. The assayer's task is now no other than that of a common commercial expert ; and he gives no official certificate whatever. Penalties have this time been enacted against the use of the abolished brands, and as a consequence no complaints of this abuse have arisen. Four seasons have elapsed since the measure was taken ; and its effects have been decidedly very beneficial. As long as there were Government brands, dealers but too often sought profit in obtaining those brands for fish undeserving of them. Since the brand was abolished they have been obliged, like dealers in any other article, to get their own trade-marks respected and sought abroad by strictly attending to the quality of the goods. The measure was, in fact, nothing but a final link in the chain of consequent fishery reform, and a completion of the system adopted in 1857, viz. to make parties concerned look for profit to nothing but their own vigilance, industry, and honesty, and stop their ancestral habit of leaning upon Government measures taken in their behalf. The law of 1857 had put a stop to the herring fishery's utter rottenness ; it was reserved for the law of 1878 to bring about a state of entire soundness in its stead.

Of such a thorough soundness the herring business has indeed since 1879 given the most substantial proofs. By the aid of very favourable seasons, both fishing returns and exports have, as shown by Appendix K, increased in the

* Law of May 7th, 1878 (*Stbl.* No. 37).

late years at a rate hitherto unknown.* Care has been taken that the law of 1878 should be known on every foreign market in time before its coming into vigour ; and foreign dealers in the season of 1879 were fully aware that there was no longer a Dutch official crown brand. Far from showing a diffidence towards herring not bearing that mark, they may be said to have ceased to mistrust Dutch fish since the removal of a Government certificate, the fallacy of which had been proved to satiety. Several markets, where in the course of the present century Dutch cured herring had ceased to appear, are now taking the article with increasing eagerness. Prices, which under the brand system had fallen below those of Scotch herring, are once more steadily rising above them, as regards the better descriptions of the article. The south of Germany is, as formerly, the greatest market for Dutch pickle-herring, in spite of the German tariff. Exports to Belgium have much increased since a new treaty of commerce was concluded with that power ; the United States have of late years become a market of importance ; and the North German markets, upon which we have in former parts of this work seen Dutch herring predominant, are being, so to say, re-conquered by the sheer force of the article's worth. Stettin herring statistics are conclusive evidence to the fact. No Dutch herring had been seen on that market for years ; whereas the quantities brought in, and nearly

* The Fishery Report for 1882 has not been published while this is being written, and will not appear before a couple of months are over. It should therefore be remembered that the above statements can be backed by official statistics only as to the years including 1881. It can, however, be stated now that the year 1882 has also been a very favourable one as regards catch, exports, and prices. Dutch herring fishers and dealers are now quite confident to sell the whole of their produce at good prices, however fast the supply may increase.

all sold off at the end of each year have in the latter years been as follows :

Years.	Barrels.	Years.	Barrels.
1875	302	1879	3,663
1876	530	1880	13,584
1877	848	1881	5,915
1878	1,446	1882	10,593

I have now, as throughout the present work, treated matters relative to Dutch herring fishery with particular care, for the obvious reason that this branch is the one most closely connected with legislation on fisheries, and therefore directly responding to the subject given for the present essay. A few words still remain to be said of the other branches since 1857; some of which, although unconnected with legislation, are still of considerable importance.

The fate of hook-fishery (for cod, flat-fish, &c.) may be resumed in the simple statement: that it is now carried on in the North Sea exclusively, and is gradually being absorbed in, or superseded by, the herring business, and is chiefly kept going by the capture of fresh fish, not of cod for salting. Bumboat owners of Scheveningén, Katwijk and Noordwijk, are gradually abandoning the hooks, or *beugvaart*, and occupy the time between herring seasons chiefly by trawling for fresh fish. In the two villages of Egmond and Zandvoort, where herring fishery has become unusual, the trawl is likewise the implement

most used. Herring ships continue hook-fishery between herring seasons, i.e. in winter and spring; but the returns often amount to a clear loss, and the reason why many ships are not kept at home between herring seasons is chiefly to keep their crews together, and have men ready in June. At the same time, luggers sometimes use the trawl instead of the hooks and lines in winter and spring; whereas a trawl-net and a keeled vessel were formerly held as objects entirely incompatible. What remains of the once important "*beugvaart*" is exercised by vessels of all descriptions and hailing from many parts of the country; and it is therefore difficult to give anything like complete statistics of the business. The figures contained in Appendix L, and relative to exports of salt cod, will show that cod-fishery, the only branch in which no other gear than hooks can be used, has not shared the increase of other branches. The maintenance of prohibitive tariffs on foreign salt-cod in France has contributed much to keep the salt cod business down. Two more important causes have of late years likewise checked its progress. Firstly, a series of circumstances have contributed to keep the fish called *geep*, the usual bait for cod-hooks, at inconveniently high prices. Secondly, profits are much greater in fresh fishery than in the salt-cod industry. The two are indeed much mixed up; for most of the flat-fish and haddock brought home from hooking trips to the North Sea is sold fresh.

Of fresh fishery it is difficult to give accurate statistics, owing to the same circumstance just stated for hook-fishery. Vessels of every description and from every fishing port and coast locality are now employed in this lucrative business; and it is carried on with implements of several descriptions, and in part jointly with fishery for

cod to be salted. Its actual importance can, like that of the latter, best be shown by export figures ; which have been collected in Appendix M. The reasons why exports of fresh fish should have increased at the very fast rate shown by this table, may be evident to any one upon the very slightest reflection. It is, simply, the increase of railway traffic, and the care now taken by continental railway directors to provide cheap and fast conveyance for fish. Fresh fish caught by Dutch vessels may, owing to the said circumstance, any day be eaten all over Belgium ; and the importance of the German market on this score is being keenly realised by Dutch dealers. Packing in ice is of course increasing at the same rate, as exports of fresh fish ; and companies exclusively destined to work this new mine have sprung up of late years, and are in a flourishing condition. Nieuwediep, particularly well situated in the centre of the North Sea and Zuider Zee fresh fisheries, and for years past directly connected with all Europe by rail, is fast increasing in importance as a fresh fish market. Ymuiden, the new North Sea port of Amsterdam, seems by its geographical position to be destined to a similar importance ; and fresh fishery may be susceptible of any degree of increase in the towns of Vlaardingen and Maassluis, when the plan for giving them a direct communication by rail with Rotterdam, and the rest of the world, shall have been fully carried out, as it will be soon. Rapid conveyance is of course the mainspring of the fresh-fish business ; and it cannot be denied that in this respect, as applied to the fishery interest, Holland has much to learn from foreign countries. Still we are now very far from the days of yore when "*de neeringhe van den versche*" was a despised business, fit for small men without capital, and yielding a pittance. A shadow, however, seems to impend

over this flourishing trade ; to wit, complaints of impaired catch. It is said by some, that the North Sea is showing signs of exhaustion, possibly by over-trawling.

The latest Fishery Board Reports mention the circumstance more than once ; and not a fortnight ere this is written, bumboat trawlers from Scheveningen reported that "the sea seemed fished out (*doodgevischt*)."^{*} We have in former chapters seen similar complaints raised at more than one period ; and if they were unfounded *then*, the case may be different now the number of trawlers of all nations in the North Sea has very much increased. Trawling prohibitions, shrimping restrictions, &c., may possibly within a few years become once more the fishery topic of the day.

Measures of a similar nature, i.e. to prevent the extinction of fish-life, have since years been the preoccupation of Government as regards the Zuider Zee. It has been remarked in an earlier part of this work, that whatever may be the probabilities of the North Sea being exhausted, the inlet called Zuider Zee, being small and very shallow, is certainly more liable to exhaustion than the wide-main ; and we have seen, in former centuries, men of the provinces surrounding this gulf engaged in long-winded disputes, and even in actual contests, to secure the conservation of a stock of fish. As a fact, in the last fifteen years the yield of pan-herring and flat-fish from the Zuider Zee has been declining ;^{*} and complaints of exhaus-

^{*} Some figures relative to Zuider Zee fishery since 1857 have been collected into Appendix N. They are anything but complete ; for pan-herring caught in the said water has during this period been brought to several other markets besides Monnickendam, and the fresh-fish returns (plaice, flounder, sole, turbot, eel, &c.) form no part of the table.

tion of the water have not unfrequently occurred ever since 1857, becoming towards 1880 constant and loud. A local inquiry instituted by delegates from the Sea Fishery College in 1878 showed that the peculiar species of small herrings caught in the Zuider Zee and sold as "pan-herring" were indeed liable to be destroyed by the use of narrow nets, and that anchovy-fishery with very narrow pocket-nets, dragged through the water at a great speed, either between two vessels or between two beams rigged out from one boat, might be presumed to extirpate herring, as fry of herring was caught in those nets in great quantities, and thrown away or sold as manure. Some Zuider Zee fishermen, it appears, were actually in the habit of "fishing for manure" in this manner, when no full-grown fish could be caught. The pocket-nets alluded to, and especially the net used between two boats and called *wonderkuil* from the astonishing returns of small fish yielded by it, could not however be prohibited altogether; for without them it was not possible to catch anchovy, which article, as shown by Appendix N, continues to be of much importance in the Zuider Zee. Anchovy is not a fish resident in the said water, but visits it in the early summer, generally between May 15th and July 15th, when there is no pan-herring fishery of importance; and the plain way to conciliate the interests of both trades was, therefore, to allow the use of the incriminated pocket-nets between the said dates, and to prohibit it at all other times. A statute to that effect has accordingly been established by law of June 21st, 1881 (Staatsblad No. 76), which, further to prevent the destruction of herring, flounder, and smelt, prohibits at any time to buy or sell, transport, possess, or use fish of those descriptions inferior to certain dimensions. In a word, statutes analogous to those described in Part III. chapter IV., have

been called into life again, and are in vigour at this moment.

The same law of June 21st, 1881, in which these statutes are contained, regulates a few more subjects relative to fishery, of which brief mention ought to be made in the present work.

The tenth clause of the law empowers Government to prohibit the killing of seals in certain parts of the Northern seas, and during certain seasons. The enactment existed before, and has only been repeated in the law of 1881 in order to collect all legislative dispositions relative to fisheries into one single statute ; the unrepealed clauses of the law of 1857 being likewise repeated in 1881 for the same reason. The Government's faculty to restrict seal-killing by Dutchmen was first established by law of Dec. 31st, 1876 (Staatsblad No. 289) and executed by Royal Decree of February 15th, 1877 (Staatsblad No. 19), by which Dutchmen were prohibited from killing seals in certain high latitudes before April 3rd of each year. The measure was enacted upon the invitation of the British Government ; it was at the time, and is now, of no importance whatever for the Netherlands, as the last enterprise of seal and walrus-killing in the Northern seas had come to an infelicitous termination in 1875, the year before the law, and the business has not been since resumed. Walrus-killing in latter years only deserves mention because it has been, so to say, the last glimpse of the once flourishing trade of whaling. I have stated in a former chapter that the latter business was kept up late in the present century by two vessels from Harlingen under the stimulus of premiums, without which it would have been given up much earlier. The last whales were caught by these vessels in 1851 and 1852, each of which seasons produced *one* fish ; and they have since made it

their sole business to knock the seal on the head and kill the walrus in the Arctic seas, this also having been given up in 1875, on account of insufficient returns. A few seals are still annually killed in the Zuider Zee and Zealand estuaries. But of the bold spirit which caused Dutchmen of old to look for gain, and find plenty, in the Northern seas, a spark has survived the utter ruin of Dutch whaling. A seaman of spirit and experience, Mr. Bottemanne,* in 1869 prevailed upon some capitalists to invest in a whaling enterprise, the aim of which was to kill the animals, not by harpoons thrown from boats, but by the modern contrivance of the rocket-shell-harpoon shot from a gun on board a steamer. A company was formed, and fitted out a whaling vessel of this description, under Mr. Bottemanne as commander. He made his first voyage in 1870, and secured only one fish, owing to inexperience in the use of the artillery. In the next year better aim was taken and 26 whales were shot, but half of them lost, mainly owing to deficiencies in the lines and gear. The returns of 1872 were still worse; and the Whaling Company of Rotterdam, which had chartered the steamer, was forced to liquidate. Another attempt to create a similar company was made in 1875, but failed for want of partners; and whaling, once the second in importance of the Dutch sea-fisheries,

* Any one who writes a *complete* history of Dutch sea-fisheries in the last quarter of a century will have to make very frequent mention of this remarkable personage. With a sailor's love for salt-water Mr. Bottemanne combines a scientist's interest for, and extensive knowledge of, the creatures that live in it. He has been a merchant-captain and a whaler; he is now Inspector of the Fisheries in the Schelde and Zealand Estuaries, and his thorough and practical ichthyological acquirements have made him the constant adviser, in matters of salmon fishery, oyster-culture, and similar subjects, of both the Government and the Sea-Fishery Board.

is now quite extinct. Cod-fishery off Iceland, the former extent of which has been spoken of in the course of the present work, has shared the same fate. The last voyages North with the cod-lines were made a few years after 1857, and all attempts to revive the business have since been in vain.

Before closing this account of Dutch sea-fisheries I have to mention a subject in which some of the men employed in them are viewed in a light not altogether favourable, to wit, the conduct of Dutch fishing crews towards their patrons and towards their foreign colleagues. The subject were perhaps best avoided ; but, as it has occasioned legislative measures, the present work would be incomplete without a brief statement of its bearings.

It is a painful fact that ever since Dutch sea-fishery has begun to increase fast, the great demand for able hands has caused fishing sailors not only to raise their pretensions as to wages, which is but natural, but also in many cases to adopt a most unjustifiable behaviour towards their employers. As trained fishermen became scarce, Dutchmen and foreigners, ill-acquainted with the business, have had to be intrusted with vessels and nets, and, what is worse, with the cure of herring ; and many native able fishermen, finding the demand for their trained labour to acquire the proportions of sharp competition between employers, have resorted to the baleful habit of desertion, i.e., breaking contracts of service whenever they were tempted from them by higher bidders, or had earned enough to indulge in idleness for a time. Wages in Dutch sea-fisheries uniformly take the shape of a share in the raw returns, generally averaging about one-third ; and the

contracts upon which this share is determined are now, as we have found them in former centuries,* intricate and apt to give rise to many disputes. Part of the crew's shares in the returns is under the habitual contracts not paid in money, but prepaid in fish ; and this of course promotes the men's tendency to help themselves to all they can get. It would be highly interesting fully to investigate the effects of socialism, as embodied in this system, upon the fishing population, both from a moral and an economical point of view. As regards the effects of the sailors' behaviour upon the business, they have for a series of years been highly deleterious, and have seriously retarded the several fisheries' progress. Instances of vessels kept at home in the height of a favourable season by the crews' desertion have been frequent of late years ; and the lawlessness prevailing in the connections between fishing shipowners and men might have ended in the ruin of both employed and employers, had not the legislative power intervened, upon the urgent representations of all ship-owners and of the Board appointed to second their interests. There is a law on discipline in merchant shipping, dated 1857, on the Netherlands statute-book ; but this law has been pronounced by the supreme judicial authority not to apply to fishing-vessels. The new Penal Code enacts penalties against desertion by fishermen ; but this Code, although now a law of the realm, has not yet been put to execution, owing to several combined circumstances ; and a special law upon the subject was therefore enacted on June 20th, 1881 (Staatsblad No. 98). Imprisonment for from one to thirty days now attends desertion, consisting in non-fulfilment of contracts of service in Dutch sea-fishing

* Part iii. chapter iii.

vessels. The law is as yet of too fresh a date for a fair judgment of its effects to be formed. In the meantime, *lack of able crews* is still a drawback upon Dutch sea-fisheries ; a circumstance which in itself proves their expansive vitality.

Desertion till 1881 was not the only offence frequently laid at the doors of Dutch fishing-crews. We have seen in earlier parts of this work that a peculiar standard of notions on private property seems from early times downward to have existed among sea-fishermen at large ; that they appear never to have strictly respected each other's possessions, and have from time immemorial been given to acts of petty piracy, which, when carried on between crews of different nationality, frequently took the aspect of private warfare. This state of things, inherent in the nature of both the men and the trade, has of course become worse in proportion as fishery in the North Sea developed in the several countries surrounding it. The available fishing-grounds have of late become very much crowded by vessels of many descriptions and nationalities, using herring-nets, trawls, and hook-and-line gear, of increasing dimensions, every one of which implements is liable, either by accident or wilful mismanagement, to injure or destroy others. A man may sometimes be in the necessity of cutting his neighbours' fleet, and is often tempted to do it, and to appropriate them afterwards, by having so formidable an instrument of destruction as a trawl in the water at the time. To pilfer nets from the fleet of a vessel lying helpless miles away is often a hard temptation for a conscience no stronger than a fisherman's appears but too frequently to be ; and, though most of the evidence on this head now before me is relative to outrages committed by British fishers upon Dutch, I do not mean

to say that the latter are as a rule much more scrupulous. At any rate, mutual remonstrances relative to acts of either wilful outrage or deliberate piracy have of late years occasioned much correspondence between the Foreign Offices of the North Sea fishing states, and between those of Great Britain and the Netherlands especially ; and, although in some cases offenders have been detected and punished, the impossibility either to take them *in flagranti* or identify them afterwards has generally been the reason of their escaping. This is not a place for dwelling on so painful a subject ; neither does the scope of the present work include an exposition of the Convention concluded at the Hague on May 6th, 1882, for the future prevention of similar outrages, and the establishment of an international police in the North Sea. A Bill for the ratification of the said treaty has been laid before the Netherlands Parliament, not many weeks before this is being written, and has not as yet been taken into consideration ; and the subject therefore cannot as yet be said to belong to the history of Dutch sea-fisheries, or of legislation respecting them. The only statute for the prevention of ill-doings by Dutch fishermen as yet on the Netherlands statute-book, besides of course the common penal laws, is contained in articles 2-5, 14, and 20 of the above-mentioned law of June 21st, 1881, which is at present the sea-fishery code of the realm. The obligation for every Dutch fishing-vessel to carry on her bows and sails letters and a number, stating her home port, name, and owner, and never to hide or obliterate those letters and numbers, is contained in the said law, together with the necessary penal and administrative dispositions to ensure the precaution being carried into effect.

APPENDIX A.

STATISTICAL ACCOUNT OF THE GRAND OR CURED-HERRING FISHERY
BETWEEN 1750 AND 1794.

Years.	Number of busses sailed from each of the following places:—												Total.	Market-hunters. (ventjagers.)	
	Maassluis.	Vlaardingen.	Enkhuizen.	Amsterdam.	De Rijp.	Zwartetral.	Delfshaven.	Rotterdam.	Schiedam.	Den Briel.	Delft.	Graft.			Egmond aan Zee.
1750	22	111	56	..	16	..	12	13	5	..	..	..	..	235	27
1751	20	113	57	..	17	..	14	13	5	..	..	..	..	239	26
1752	22	118	55	..	17	..	16	12	8	1	..	..	..	249	28
1753	23	111	57	..	16	..	17	12	9	1	..	..	..	246	30
1754	22	101	58	..	16	..	17	10	10	..	..	..	..	234	31
1755	20	102	58	..	16	..	18	10	10	..	..	..	..	234	26
1756	20	99	58	..	16	..	17	8	10	..	..	..	..	228	24
1757	16	90	59	..	16	..	17	8	10	..	..	..	..	216	24
1758	15	80	56	..	14	..	17	5	6	..	..	..	..	193	17
1759	12	68	44	..	14	..	12	6	7	..	..	..	..	163	15
1760	10	63	43	..	14	..	11	6	7	..	..	..	..	154	13
1761	7	59	40	..	14	..	5	5	4	..	..	..	..	134	15
1762	7	59	39	..	14	..	5	6	5	..	..	..	..	135	15
1763	7	64	40	..	14	..	7	7	5	..	..	..	..	144	15
1764	14	71	40	..	14	..	9	6	6	..	..	..	..	160	17
1765	15	69	40	..	14	..	9	6	7	..	..	..	..	160	17
1766	14	60	40	..	14	..	8	2	11	..	..	..	..	149	17
1767	14	58	40	..	16	..	7	2	11	..	..	..	..	148	17
1768	12	61	41	..	15	..	7	2	10	..	..	..	..	148	17
1769	12	64	41	..	14	..	7	2	9	..	..	..	..	149	20
1770	14	62	41	..	14	..	7	3	8	..	..	..	..	149	20
1771	14	64	41	..	14	..	7	5	7	..	1	1	..	153	20
1772	15	68	42	..	13	..	7	7	7	..	..	1	..	160	23
1773	18	76	44	..	13	..	7	7	5	..	..	1	..	171	20
1774	18	74	44	..	14	..	7	6	2	..	..	1	..	166	20
1775	17	66	41	..	16	..	6	6	2	..	..	2	1	158	20
1776	21	84	41	..	16	..	6	6	2	..	..	2	1	179	22
1777	23	76	41	..	15	..	6	4	2	..	..	2	1	170	22
1778	20	71	41	..	15	..	6	4	1	..	..	2	..	160	18
1779	17	75	41	..	16	..	6	4	1	..	..	2	1	163	21
1780	16	67	40	..	15	..	6	4	1	..	..	2	..	151	20
1781	No business done on account of the war.														
1782	..	60	43	..	17	..	..	..	..	..	..	..	..	120	..
1783	25	74	43	..	18	..	3	2	1	..	..	..	..	166	15
1784	23	74	45	4	18	..	3	2	1	..	..	..	..	170	15
1785	24	77	44	5	17	..	4	2	1	..	..	..	..	174	15
1786	24	81	44	6	17	..	4	2	1	..	..	..	..	179	15
1787	25	84	45	6	17	..	2	1	1	..	..	..	..	181	15
1788	27	82	44	6	17	..	2	1	..	..	..	..	..	180	15
1789	29	85	44	4	17	..	3	1	..	..	..	..	..	183	15
1790	28	93	44	4	17	..	2	1	..	..	..	..	..	189	15
1791	30	103	44	1	18	..	2	1	..	..	..	..	..	199	15
1792	31	104	44	1	11	2	1	..	..	..	..	..	..	194	15
1793	35	96	44	1	17	1	2	..	..	..	..	..	..	196	11

APPENDIX B.

STATISTICS OF DUTCH WHALING, 1670-1794.

Years.	Vessels sailed to Greenland.	Whales caught off Greenland.	Vessels sailed to Davis Straits.	Whales caught in Davis Straits.
1670	148	792		
1671	155	630½		
1672	The Greenland trade in these years was forbidden because of the troublous times.			
1673				
1674				
1675	148	881½		
1676	145	808½		
1677	149	686		
1678	110	1118½		
1679	126	831		
1680	148	1373		
1681	172	889		
1682	186	1470		
1683	242	1343		
1684	246	1185		
1685	212	1383½		
1686	189	639		
1687	194	617		
1688	214	345		
1689	163	243		
1690	117	818½		
1691	2	(Sailed from Hamburg and Bremen, whaling being prohibited throughout the Republic.)		
1692	32			
1693	89	62		
1694	62	175		
1695	96	156½		
1696	100	201		
1697	111	380		
1698	140	1274½		
1699	151	1488½		
1700	173	775½		
1701	207	907		
1702	225	2071½		
1703	208	697½		
1704	130	646½		
1705	157	651½		
1706	149	1664½		
1707	131	452½		
1708	121	128		
1709	127	525½		
1710	137	190½		
		62		

APPENDIX B.—STATISTICS OF DUTCH WHALING—*continued*.

Years.	Vessels sailed to Greenland.	Whales caught off Greenland.	Vessels sailed to Davis Straits.	Whales caught in Davis Straits.
1711	117	630 $\frac{1}{2}$		
1712	108	370 $\frac{1}{2}$		
1713	94	256		
1714	108	1234		
1715	134	696 $\frac{1}{2}$		
1716	153	519		
1717	180	391		
1718	194	281 $\frac{1}{2}$		
1719	182	308		
1719-1728	1504	3439	748	1251
1729-1738	858	2198	975	1929
1737	88	149	106	355
1738	74	113	112	360
1739	58	51 $\frac{1}{2}$	133	676 $\frac{1}{2}$
1740	..	..	..	..
1741	..	..	..	..
1742	48	50	125	508 $\frac{1}{2}$
1743	49	74 $\frac{1}{2}$	137	850 $\frac{1}{2}$
1744	39	182 $\frac{1}{2}$	148	1311
1745	31	206 $\frac{1}{2}$	153	362 $\frac{1}{2}$
1746	40	341	130	820
1747	37	135 $\frac{1}{2}$	128	820
1748	..	..	93	217
1749	116	470 $\frac{1}{2}$	41	206
1750	112	533 $\frac{1}{2}$	46	62 $\frac{1}{2}$
1751	117	264 $\frac{1}{2}$	45	65 $\frac{1}{2}$
1752	117	438 $\frac{1}{2}$	42	107 $\frac{1}{2}$
1753	118	539 $\frac{1}{2}$	48	100
1754	135	654 $\frac{1}{2}$	36	18
1755	152	685 $\frac{1}{2}$	29	31
1756	160	529 $\frac{1}{2}$	26	39
1757	159	413 $\frac{1}{2}$	20	10
1758	151	..	7	..
1759	133	425	22	39
1760	139	376 $\frac{1}{2}$	15	78
1761	138	287 $\frac{1}{2}$	23	70
1762	139	124	26	65 $\frac{1}{2}$
1763	127	565	35	132
1764	126	193	38	31
1765	130	394	35	82
1766	135	156 $\frac{1}{2}$	31	32
1767	132	102 $\frac{1}{2}$	33	83
1768	124	392	36	207 $\frac{1}{2}$
1769	111	684	43	154 $\frac{1}{2}$
1770	105	434 $\frac{1}{2}$	45	85 $\frac{1}{2}$
1771	110	105 $\frac{1}{2}$	40	38
1772	93	546 $\frac{1}{2}$	38	239 $\frac{1}{2}$
1773	91	193 $\frac{1}{2}$	43	247 $\frac{1}{2}$
1774	72	281	48	179
1775	88	86	41	19
1776	84	364 $\frac{1}{2}$	39	153 $\frac{1}{2}$
1777	75	250 $\frac{1}{2}$	42	177 $\frac{1}{2}$
1778	64	252	47	54 $\frac{1}{2}$

APPENDIX B.—STATISTICS OF DUTCH WHALING—*continued*.

Years.	Vessels sailed to Greenland.	Whales caught off Greenland.	Vessels sailed to Davis Straits.	Whales caught in Davis Straits
1779	59	132½	45	36
1780	46	383½	36	91
1781 } 1782 }	No business done on account of the war.			
1783	46	325½	9	2
1784	57	163½	4	8
1785	65	328	1	5
1786	?	..	?	..
1787	60	198½	7	41
1788	58	167	11	21
1789	53	481½	8	23
1790	52	103½	14	10
1791	49	61½	13	17½
1792	47	200	14	2
1793	31	72	1	
1794	55	92½	3	13½

APPENDIX C.

COD FISHERY OFF ICELAND, 1751-1790.

Years.	Number of vessels.	Average number of lasts caught by each vessel.	Years.	Number of vessels.	Average number of lasts caught by each vessel.
1751	73	12	1772	121	7
1752	64	7	1773	107	5
1753	56	20	1774	83	8
1754	95	11	1775	78	5
1755	76	15	1776	36	9
1756	95	2, 3, or 4	1777	22	16
1757	111	a few lasts only.	1778	24	{ even better than in 1770.
1758	94		1779	61	16
1759	124		1780	63	20
1760	..	15	1781	Stopped by war.	
1761	123	20	1782		
1762	142		1783	..	very bad.
1763	148		1784	49	unfavourable.
1764	113		1785	52	"
1765	140		1786	58	
1766	155	10	1787	2	
1767	157		1788	1	
1768	160	5	1789	None.	
1769	137	8	1790	"	
1770	126	14			
1771	145	6			

APPENDIX D.

Text of the Law on Herring Fishery, dated March 12th, 1818 (*Staatsblad*, No. 15); literally translated.

WE, WILLIAM, by the grace of God, King of the Netherlands, Prince of Orange-Nassau, Grand Duke of Luxemburg, &c., &c. To all who shall see these, or hear them read, Our greeting.

Whereas We have considered, that the Grand or Herring Fishery of this Kingdom has always been an object of the Government's solicitude and protection ;

That measures have at several times been taken to prevent prejudice by all such doings and evil practices as might endanger and diminish the renown of Herring caught and cured by the Fisheries of this Kingdom ;

That the happy result of these measures yields constant proof of their suitability, whence there is reason to forcibly maintain them ;

Considering, moreover, that the said Fishery is not exercised in the same manner in all provinces of this Kingdom, and that care ought to be taken lest a protection of both fisheries should lead to their doing each other a prejudice ; the object being, on the contrary, that both shall contribute to the welfare of this branch of general industry ;

We have, after taking the advice of the Council of State, and upon common deliberation with the States-General, decreed, and hereby do decree as follows :

GENERAL RULES.

Art. 1.—Herring-fishery under the Netherlands colours shall be exercised only for the account of inhabitants of this Kingdom, and in vessels owned by them.

2.—No one shall, under a penalty of 2000 florins, let any foreigner have a share in a herring-fishing enterprise, or lend his name to a foreigner for such enterprise.

- 3.—All inhabitants of this Kingdom are forbidden, under the same penalty, to participate, even indirectly, in any herring-fishery under foreign colours.
- 4.—Any person who shall undertake either directly or indirectly to entice inhabitants of this Kingdom to exercise herring-fishery in a foreign country, shall forfeit a penalty of 2000 florins, or be imprisoned for one year.
- 5.—Any fisherman who shall have either exercised herring-fishery abroad, or engaged there to exercise such fishery, shall be imprisoned for six months.
- 6.—No foreign herring, whether fresh, cured, salted or smoked, shall be imported into this Kingdom, on pain of forfeiture of the herring, and a fine of 500 florins for every barrel of salted pickle-herring, or 5 florins per hundred of herrings fresh or smoked.

GENERAL SUPERINTENDENCE AND POLICE OF THE HERRING
FISHERY.

- 7.—The external police, or general superintendence of the herring-fishery, shall be governed by uniform rules all over the Kingdom, established by law and by Royal Decrees based upon the law.
- 8.—The internal police, or detailed regulations for these fisheries, shall be established for each sea-bound Province, by the Provincial States; but the said regulations shall not be contrary to the general rules.
- 9.—The internal police of the herring fisheries includes : the details of equipment, the rules relative to applying for, and obtaining, permission to fish for herring, the mode of preparing, sorting and salting herring, and the necessary precautions relative to vessels going for cod-fish and having some herring nets on board.
- 10.—In every sea-province where it shall be found useful, the Provincial States shall, subject to Our approval, appoint a College to have the direction of all things concerning the herring fishery.
- 11.—In provinces where herring-fishery has not sufficient importance to require a separate College, it shall be lawful for the Provincial States to confide the care of that fishery to such Boards as shall have the direction of other fisheries in such provinces.

- 12.—Any persons exercising herring-fishery without being authorized thereto in the manner stipulated by the Provincial States, shall be liable, viz. the equipper of the vessel to a fine ranging from 300 florins to 3000 florins, and her steersman to imprisonment for not less than fourteen days and not more than two months.

OF THE SEVERAL HERRING-FISHERIES.

- 13.—The Grand, or Pickle-herring Fishery is exercised in the summer or autumn, in keeled vessels, off Hitland [Shetlands] and Edinburgh, and under the coasts of England.
- 14.—The object of this fishery is, to catch herring of the best quality, and to cure, salt and barrel such herring at sea, both for exportation and home consumption.
- 15.—The Small, or Fresh-herring Fishery is exercised in the high sea, generally in the so-called Deep Water, about east of Yarmouth, in flat-bottomed and keelless vessels which commonly do not enter any port, but go ashore on the sea-beach.
- 16.—It shall be provisionally interdicted as heretofore, to cure herring from the latter-named fishery, either at sea or ashore, under the following penalties, viz. one month's imprisonment for the steersman, and a fine of 5 florins per hundred of herrings to be forfeited by the shipowner and all other delinquents, besides forfeiture of the herring. It shall, however, be lawful for the King upon advice of the Provincial States to ordain how, in how far, and at what time herring from the Small Fishery shall be allowed to be cured and made into pickle-herring, without prejudice either to the interests of the Grand Fishery or to the renown of Netherlands herfing.
- 17.—The Pan-herring fishery is exercised, with or without vessels, in the entire extent of the Kingdom in the rivers, river-mouths, inner seas, and within one hour's distance from the outer sea-shores.
- 18.—All fishermen, equippers of vessels, dealers, and persons whatsoever are prohibited, on pain of one month's imprisonment and a fine of 5 florins per hundred of herrings, besides forfeiture of the herring, to cure or salt as pickle-herring any herring from the fishery last named.
- 19.—All dispositions further required respecting the said fishery shall be enacted by the States of the several Provinces, who shall be entitled to comminate penalties against breach of their

rules, viz. from fourteen days' to two months' imprisonment, and fines up to 300 florins, whether separately or in cumulation.

FISHERMEN'S DUTIES DURING THEIR VOYAGES OUT AND HOME.

- 20.—All steersmen of herring-ships shall be obliged to carry the herring caught by them into this Kingdom, on pain of one month's imprisonment and a fine of 50 florins.
- 21.—All herring fishermen, having left their port or place of equipment, shall be bound, time and weather serving, to sail straight to their fishing water, and likewise to sail straight home thence
- 22.—They shall not, unless in case of urgent necessity, enter any foreign port, or port belonging to another province than where the vessel was equipped.
- 23.—All fishermen are prohibited, on pain of one month's imprisonment and a fine of 100 florins, from selling, bartering, exchanging, or giving away at sea, any herring caught by them.
- 24.—They are prohibited, under the same penalties, from buying herring either abroad or at sea, for the purpose of bringing such herring into this Kingdom.
- 25.—Any shipowner convicted of having, after the close of the fishery, given his vessel another destination besides the usual and lawful one, i.e. destined her to buy herring at sea or abroad, or sell his own in a foreign country, shall be fined 50 florins per barrel of foreign herring brought home, and 300 florins if he shall have sold his own abroad.

LIMITS OF THE HERRING-FISHING SEASON.

- 26.—No inhabitant of this Kingdom shall be allowed to shoot nets for herring fishery in the open sea earlier than June 24th, at night, or later than December 31st. Any steersman contravening this enactment shall be imprisoned for one month, and fined 50 florins. The vessel's owner shall be fined 1000 florins, if privy to the transgressions.
- 27.—The aforesaid prohibition is not applicable to vessels mentioned in Article 9, sailing for cod-fish and having some herring nets on board. Dispositions relative to such vessels shall be enacted by the Provincial States.
- 28.—Muster-rolls shall be made out, and signed by the steersman and crew of each herring-fishing vessel; the forms for such muster-rolls shall be determined by the Provincial States.
- 29.—The Provincial States shall be entitled to determine the date

on which herring fishermen shall be allowed to enter port, cases of urgent necessity and extraordinary capture excepted.

- 30.—The Provincial States are likewise entitled to determine the opening of the Small or Fresh-herring Fishery ; and to comminate fines not exceeding 100 florins against transgressors of this and the last article.

OF SALE-HUNTING (*Jagery*).

- 31.—It shall be permitted annually to send some vessels out to the herring fleet, there to take on board herring *of the first capture*, in order to bring them speedily into this Kingdom.
- 32.—The said vessels, known as herring-hunters (*haring-jagers*), shall not carry the herring taken on board by them anywhere but to the port whence they have sailed.
- 33.—The opening and closing dates of herring-hunting shall be determined by the Provincial States.
- 34.—Articles 20, 21, 22, 23, 24, and 25 of the present law shall apply to the owners and skippers of herring-hunters.

RULES TO BE OBSERVED WHILE IN FISHING WATER.

- 35.—All herring fishermen from this Kingdom are prohibited from fishing for herring, at any time, between the sand-bars and rocks of Norway, Ireland, and Scotland.
- 36.—Any injury or damage done by one herring-fisher to another at sea shall be subject to a fine ranging between 10 florins and 100 florins, and imprisonment from 10 days to one month ; without prejudice to an action for damages and interests.
- 37.—All vessels and fishing implements shall be marked with convenient marks, to be determined by the Provincial States.

OF THE ASSAYING OF PICKLE-HERRING, AND BRANDING OF BARRELS USED FOR SALTING AND PACKING SUCH HERRING.

- 38.—No pickle-herring shall be sold, or carried from the place where landed, unless the fish be previously assayed by sworn assayers (*keurmeesters*), and the barrel branded with the name of the place where such herring was brought ashore.
- 39.—Pickle-herring transported from one province into another shall be allowed to be exported abroad in the same barrel, and only marked with the local brand ; but if repacked into another barrel, such herring shall not be exported abroad unless branded

with the name or escutcheon of the province where it was landed.

- 40.—No province-brands shall be apposed to barrels unless previously marked with the peculiar signs to be determined by provincial regulations.
- 41.—Any brander who shall have apposed the provincial or local brand to barrels known by him to contain foreign herring, or herring from another province, shall be liable to imprisonment for one year.
- 42.—All barrels, great or small, used in salting herring, shall be previously tested by sworn assayers.
- 43.—The assayers, both of herring and barrels, and the branders, both of local and provincial marks, shall be appointed and sworn by the municipal magistrates.
- 44.—The Provincial States shall draw up the assayers' and branders' instructions, and determine the peculiar marks to be apposed to barrels in order to certify the year when the herring was caught, its quality and sort.
- 45.—Any person selling or expediting herring in this Kingdom, whether to a home or foreign destination, shall be liable to a fine of 20 florins for each barrel, great or small, not provided with the prescribed brands.

ADDITIONAL CLAUSES.

- 46.—The premiums proffered for herring-fishery shall be regulated by the King in a fair proportion, in consideration of the expenses of the several kinds of equipment.
- 47.—All provincial and municipal statutes not in contradiction to the terms of the present law shall remain in force till ulteriorly provided for by the Provincial States.

The which We order and command to be inserted into the Statute-Book (*Staatsblad*), and that all ministerial departments and authorities, colleges and officers whatsoever shall see to the strict execution of the same.

Given at the Hague, on March 12th of the year 1818, the Fifth of Our Reign.

(Signed) WILLIAM,

By the King's Order,

(Signed) A. R. FALCK.

APPENDIX E.

STATISTICAL ACCOUNT OF THE "GRAND" OR CURED-HERRING
FISHERY, 1814-1853.

Years.	Number of Busses.	Total number of lasts of herrings.	Average number of lasts brought in by each buss.
1814	98	1862	19
1815	137	3558	26
1816	159	3498	22
1817	160	3360	21
1818	168	1680	10
1819	169	1521	9
1820	153	1380	9
1821	168	2856	17
1822	160	1600	10
1823	128	1792	14
1824	123	2214	18
1825	111	2664	24
1826	130	3120	24
1827	130	3250	25
1828	133	3059	23
1829	131	1965	15
1830	173	4329	25
1831	132	2178	16
1832	120	2520	21
1833	107	2568	24
1834	116	2900	25
1835	113	2260	20
1836	117	2925	25
1837	117	3550	31
1838	121	3267	27
1839	120	2280	19
1840	122	2318	19
1841	123	2706	22
1842	129	2964	23
1843	127	1150	9
1844	126	2800	23
1845	127	1263	10
1846	116	1283	11
1847	115	2149	19
1848	107	2900	28
1849	110	2260	20
1850	102	2515	24½
1851	97	2454	25
1852	93	1499	16
1853	92	2284	25

APPENDIX F.

STATISTICAL ACCOUNT OF THE FISHERY OF SALT HERRING FOR
SMOKING (*Steurharing*), CARRIED ON IN VESSELS FROM THE
COAST VILLAGES OF SCHEVENINGEN, KATWIJK, AND NOORDWIJK,
1823-1853.

Years.	Number of boats.	Herrings brought home.	Average number of herrings per boat.
1823	35	4,202,000	121,200
1824	41	3,102,000	75,658
1825	43	2,378,000	55,502
1826	40	3,192,000	79,800
1827	45	4,615,000	102,555
1828	47	4,476,000	95,650
1829	43	6,150,000	143,023
1830	51	3,641,000	71,419
1831	39	1,282,000	32,872
1832	36	930,000	25,833
1833	39	4,199,400	107,677
1834	45	2,699,000	59,311
1835	49	3,430,000	69,592
1836	52	6,952,200	133,700
1837	71	10,503,000	147,930
1838	83	7,138,000	86,000
1839	93	8,630,000	92,800
1840	101	9,539,000	94,445
1841	100	8,215,000	82,150
1842	106	8,942,600	84,364
1843	100	5,695,000	56,950
1844	89	7,632,000	85,752
1845	89	8,932,000	100,358
1846	94	8,716,000	92,723
1847	96	12,398,000	129,146
1848	96	9,520,600	99,166
1849	98	10,906,000	112,204
1850	102	9,767,000	95,755
1851	111	14,000,000	126,207
1852	117	15,918,000	136,569
1853	118	23,433,000	198,585

APPENDIX G.

GENERAL ACCOUNT OF THE DUTCH HERRING FISHERIES BETWEEN
1834 AND 1853.

Years.	Cure-herring caught.	Salt herring (<i>steur- haring</i>) caught.	Fresh or "pan herring" caught.
1834	32,480,000	2,699,000	31,920,000
1835	25,312,000	3,430,000	29,890,000
1836	32,760,000	6,952,200	16,550,000
1837	39,760,000	10,503,000	5,730,000
1838	39,590,400	7,138,000	2,270,000
1839	25,536,000	8,630,000	3,410,000
1840	25,961,600	9,539,000	4,590,000
1841	30,307,200	8,215,000	9,560,000
1842	33,196,800	8,942,600	12,140,000
1843	12,880,000	5,695,000	11,090,000
1844	31,360,000	7,632,000	8,360,000
1845	14,145,600	8,932,000	14,240,000
1846	14,369,600	8,716,000	17,680,000
1847	24,068,800	12,398,000	12,940,000
1848	32,480,000	9,520,000	23,820,000
1849	25,312,000	10,906,000	14,120,000
1850	28,168,000	9,767,000	22,520,000
1851	27,484,800	14,000,000	18,260,000
1852	16,788,800	15,918,000	16,500,000
1853	25,580,800	23,433,000	11,920,000

APPENDIX H.

ACCOUNT OF THE ICELAND COD FISHERY BETWEEN
1844 AND 1853.

Years.	Number of ships, each making one voyage.	Total returns. Lasts of salt cod of divers kinds.
1844	2	50
1845	2	51
1846	2	58
1847	3	84½
1848	5	176
1849	6	176
1850	3	93
1851	3	108
1852	5	155
1853	6	141

APPENDIX I.

ACCOUNT OF THE NORTH SEA HOOK FISHERY IN WINTER, FOR COD,
HADDOCK, PLAICE, &c. (*beugvischerij*), BETWEEN 1844 AND 1853.

Years.	Number of Ships.	Number of Voyages.	Total catch.	
			Barrels of salt cod and haddock, plaice, &c.	Numbers of cod, haddock, plaice, &c., brought home alive.
1844	41	147	7,122	31,141
1845	36	119	4,307	17,132
1846	38	139	7,607	21,946
1847	39	136	6,334	19,062
1848	30	105	4,316	9,919
1849	35	98	4,423	11,897
1850	32	110	4,993	9,958
1851	26	97	7,464	15,010
1852	38	144	11,939	16,924
1853	35	112	8,078	14,185

APPENDIX J.

ACCOUNT OF THE TRAWLING RETURNS OBTAINED BY TRAWLERS OF
KATWIJK, 1821-1850.

Years.	Number of trawl boats.	Total returns.	Average return per boat.
1821	38	fl. 112,302	fl. 2955.26
1822	37	79,128	2138.85
1823	34	65,047	1913.15
1824	31	70,573	2276.58
1825	30	75,169	2505.62
1826	31	78,413	2529.45
1827	31	68,678	2215.40
1828	32	55,872	1746.00
1829	33	57,560	1743.63
1830	33	69,577	2108.00
1831	27	49,055	1816.75
1832	27	48,905	1811.22
1833	28	51,690	1846.00
1834	29	59,091	2037.62
1835	29	61,316	2114.30
1836	29	55,753	1922.50
1837	27	60,539	2242.20
1838	32	64,400	2012.51 ^s
1839	36	84,376	2343.80
1840	42	79,762	1899.09 ^s
1841	46	61,793	1343.33 ^s
1842	50	69,377	1387.54 ^s
1843	50	86,638	1732.76
1844	49	89,653	1829.45 ^s
1845	43	73,769	1715.56
1846	48	58,162	1211.71
1847	47	79,593	1693.49
1848	50	80,437	1608.74 ^s
1849	50	76,223	1524.46
1850	48	78,902	1643.78

APPENDIX

NORTH SEA HERRING FISHERIES
THE REPEAL OF

Years.	Vessels employed.		HERRING BROUGHT HOME.			
			Cured herring (barrels) by		Fresh herring salted preparatory to smoking (<i>stuurharing</i>) (thousands), by	
	Keeled boats.	Bumboats.	Keeled vessels.	Bumboats.	Keeled vessels.	Bumboats.
1	2	3	4	5	6	7
1856	82	147	35,924	106		36,295
1857	91	157	21,924	210		29,803
1858	95	175	16,940	548		24,969
1859	79	178	23,226	1,398		27,768
1860	92	174	26,222	295		22,545
1861	91	181	29,260	165		20,568
1862	90	181	51,108	136		32,011
1863	86	170	35,056	127		38,612
1864	80	180	26,946	140		33,535
1865	81	186	29,388	419		57,372
1866	82	195	22,856	3,096†		48,498
1867	89	198	27,664	2,811		46,928
1868	91	202	38,515	4,714		74,043
1869	104	192	29,900	3,827	1,539	27,323
1870	120	189	70,868	4,130	5,265	59,025
1871	122	200	77,897	21,544	5,366	86,699
1872	108	208	60,442	22,248	1,655	39,350
1873	102	205	77,412	39,962	2,710	53,295
1874	114	218	66,118	46,519	1,349	27,582
1875	115	222	59,483	42,478	826	19,439
1876	109	229	50,102	58,221	1,021	37,478
1877	113	244	71,585	69,414	2,013	38,932
1878	127	265	70,355	41,176	2,628	30,465
1879	128	268	78,103	87,750	1,764	44,260
1880	133	284	134,275	83,724	9,989	56,741
1881	139	269	110,110	88,788	3,323	50,279

* Column 9. Smoked herring from the Zuider Zee is comprised in these figures.

† Column 10. A considerable part of these figures, in the earlier years especially, represents This fraud ceased in later years, when Dutch-brand herring was neither dearer, nor expected

‡ Column 5. Most, and in latter years the whole, of this pickle herring from the coast was not luggers, and branded and exported along with such herring.

§ Column 8. The export figures for 1879 and following years are taken from Custom-house over Custom-house declarations in it. The figures down to 1879 are collected from the College's for exportation, and their figures are constantly at variance with Custom-house statistics.

K.

IN THE NETHERLANDS, FROM
THE LAW OF 1818.

EXPORTS.		IMPORTS.	HIGHEST AND LOWEST PRICES.			
Of cured herring (barrels).	Of smoked herring or "bucking," (thousands)*	Of cured herring for consumption (barrels).	Of "full"-cured herring brought			
			(a) in keeled vessels, after the close of hunting time (barrels containing 800 herrings*).		(b) in bumboats from Scheveningen (barrels containing 620 herrings).	
8	9	10†	11 H. fl.	12 L. fl.	13 H. fl.	14 L. fl.
	33,099					
	28,001					
17,140	30,919	4,098	69	36	78	20
15,355	27,863	3,787	38	33	34	21
14,490	25,803	about 8,000	48.25	47.50	26	21
15,040	27,244	5,276	83	43.50	88	23
22,236	25,184	6,069	32	21	24	16
22,250	41,310	less than 4,000	42	20	38	22
14,726	42,698	8,364	50	26	27.50	17.50
17,224	49,404	9,715	45	25	45	16
13,023	66,072	14,822	51	27.25	27	20
15,098	53,729	12,280	63	20	22.10	17.25
22,152	71,275	5,400	60	19	28	12
15,921	55,086	21,060	66	25	28	12
39,435	59,032	16,734	40	24	f. 24	
48,437	84,176	2,709	44	25	28	13
46,839	67,916	1,984	76	28	24	15
58,388	47,645	3,415	29.25	21	27	17
68,306	44,928	2,080	39.75	27.50	28	18
68,142	27,486	1,770	45	24.25	36.50	17.50
68,430	23,166	2,830	61	34.75	34.25	26.50
88,843	42,201	1,205	98	22	26.50	16
76,004	33,345	475	31.25	18	26	14.50
90,841§	45,216	2,033	56	23	33.25	19
138,986	52,470	480	22.75	14.50	32.50	10.50
134,620	41,427	220	35	25	27	17.50

Scotch herring imported and re-exported after being transferred to Dutch-branded barrels to be better than Scotch.

branded upon coming ashore, but carried to Vlaardingen and mixed up with herring caught in

statistics, and are probably inexact, as the article is duty free, and there is no sufficient control reports, who were enabled, before the said year, to state the exact number of barrels branded

APPENDIX L.

EXPORTS OF SALT COD.

Years.	Quantities exported to		Total of exports.
	Belgium.	Germany.	
	Barrels.	Barrels.	Barrels.
1857	456	1,949	2,883
1858	498	2,118	3,274
1859	280	2,445	2,886
1860	402	1,474	3,564
1861	333	2,384	3,774
1862	200	2,494	3,590
1863	244	2,956	3,592
1864	1,530*	19,980*	21,780*
1865	2,390	2,030	6,630
1866	4,160	2,000	7,550
1867	1,250	1,810	3,510
1868	3,480	1,640	5,840
1869	4,260	2,750	7,790
1870	3,900	2,530	6,600
1871	2,210	1,540	4,030
1872	about 2,440	1,460	3,900
1873	546†	200†	764†
1874	about 272	404	676
1875	257	323	580
1876	528	415	943
1877	539	434	973
1878	337	263	600
1879	648	245	893
1880	274	202	533
1881	302	223	575

* These figures, although taken from Custom-house statistics, are obviously erroneous.

† In consequence of a change in the arrangement of Custom-house statistics, exports of salt cod are given in *thousands of kilogrammes* from 1872 downwards.

APPENDIX M.

EXPORTS OF FRESH SEA FISH.

(In thousands of kilogrammes.)

Years.	Fresh fish exported to		Total of exports.
	Belgium	Germany.	
1857	983	440	1498
1858	999	802	1863
1859	750	689	1611
1860	716	830	1653
1861	520	526	1163
1862	820	593	1499
1863	1362	406	1915
1864	1394	758	2256
1865	1599	474	2095
1866	1445	152	1914
1867	1617	157	2110
1868	1207	276	1499
1869	1961	327	2302
1870	2745	390	3140
1871	2614	416	3114
1872	2617	420	3120
1873	4327	633	5459
1874	4456	583	5584
1875	5491	470	6911
1876	5452	375	6779
1877	3637	375	4236
1878	4671	603	5354
1879	5952	416	6638
1880	6445	443	6959
1881	3943	463	4800

APPENDIX N.

ZUIDER ZEE FISHERIES, 1854-1881.

Years.	Pan-herring brought to sale at Monnickendam (in thousands).*	Anchovies caught (in "ankers," or solb. barrels).	Highest prices of anchovy caught and sold in the same year (per anker).
			f.
1854	13,160	10,000	12
1855	10,674	2,000	16.50
1856	15,390	2,000	21
1857	11,980	10,000	17
1858	13,880	60,000	9.50
1859	14,920	30,000	11
1860	13,071	6,000	7.50
1861	16,460	5,000	9
1862	16,232	7,000	9.25
1863	25,755	1,000	20
1864	20,278	2,000	20
1865	16,179	1,000	52
1866	20,326	65,000	20
1867	19,472	10,000	18
1868	17,105	1,000	29
1869	18,657	75,000	15
1870	11,435	4,000	17
1871	15,336	7,000	23.50
1872	6,694*	9,000	25.75
1873	9,158	30,000	31
1874	6,106	40,000	27.50
1875	8,364	55,000	25.50
1876	5,605	46,000	22.75
1877	6,496	6,000	22
1878	1,823	1,400	29
1879	4,635	3,000	43
1880	12,566	1,000	78
1881	7,770	15,000	66

* The total quantities of pan-herring caught in the Zuider Zee are about double the quantities mentioned in this column as regards the earlier years. Since 1872 most Zuider Zee herring has been carried direct to the inland markets; and the decline of the sales at Monnickendam is no sign of corresponding decline in the business.

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